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EMPLOYMENT-UNEMPLOYMENT

HEARINGS

BEFORE THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

PART 36

JULY 7, AUGUST 4, OCTOBER 6, AND NOVEMBER 3, 1989

[Hearing days of September 1 and December 1, 1989, and January 5, 1990, were not held]

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EMPLOYMENT-UNEMPLOYMENT

FRIDAY, JULY 7, 1989

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m., in room 2359, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the committee) presiding.

Present: Representative Hamilton.

Also present: Joseph J. Minarik, executive director; William Buechner, Jim Klumpner, and Chris Frenze, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative HAMILTON. The Joint Economic Committee will come to order.

The committee is very pleased to welcome Commissioner Janet Norwood, of the Bureau of Labor Statistics, for her testimony on the employment and unemployment situation for June.

Based on the employment and unemployment data released this morning by the Bureau of Labor Statistics, the economy appears to be in a holding pattern. The unemployment rate in June rose 0.1 percent to 5.3 percent, back to where it was in April. While unemployment rose by 166,000 in June, the number of people employed also rose substantially, by 326,000. Payroll employment rose 180,000, almost exactly the average monthly increase so far during 1989.

The two elements of today's report that are of greatest concern are the substantial increase in unemployment reported for blacks, up almost 200,000 since April, and the decline in employment in the Nation's manufacturing industries, down 50,000 since March.

The committee will turn now to Commissioner Norwood for her detailed report on the employment and unemployment situation for June.

Madam Commissioner and your colleagues, we welcome you.

STATEMENT OF HON. JANET L. NORWOOD, COMMISSIONER, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, ACCOMPANIED BY THOMAS J. PLEWES, ASSOCIATE COMMISSIONER, OFFICE OF EMPLOYMENT AND UNEMPLOYMENT STATISTICS; AND PAUL ARMKNECHT, ASSISTANT COMMISSIONER, OFFICE OF CONSUMER PRICES AND PRICE INDEXES

Mrs. NORWOOD. Thank you very much, Mr. Chairman. I have with me this morning Paul Armknecht, our Assistant Commissioner for Consumer Prices, and Tom Plewes, our expert on employment and unemployment, and we're all pleased to be here.

The Nation's labor market continued to show moderate growth in June. The overall jobless rate, at 5.2 percent, and the civilian worker rate, at 5.3 percent are both close to the levels that prevailed during most of the past year.

The number of payroll jobs reported in our business survey rose by a modest 180,000 in June, following a gain of 205,000 in May after revision to take account of more complete reports. During the last 4 months, gains in employment have been smaller than previously, averaging just under 200,000 a month—considerably less than the average monthly gain of 275,000 during the prior year.

The trend in factory jobs is a key difference between these periods. Factory employment has fallen by 50,000 over the past 3 months, and the declines were fairly widespread. As was the case in April and May, our June manufacturing diffusion index showed that more industries lost jobs than gained them. The industries that experienced substantial job growth last year have all slowed over the last quarter. The largest June employment decline occurred in motor vehicle manufacturing, which lost 15,000 jobs. Firms in that industry have idled production lines to adjust their inventories to lower car sales.

In yet another indication of the slowdown in manufacturing, the factory workweek slipped a tenth of an hour to 40.9 hours. While still relatively high by historical standards, this is the first time the factory workweek has been below 41 hours since September 1987.

Elsewhere in the goods-producing sector, construction activity has been slow, and in June, after seasonal adjustment, employment in construction showed no growth. Mining employment fell by 10,000, but this decline resulted from coal miners absent from work because they were on strike.[1]

Employment in the services industry continued to grow. The June increase was 160,000, with one-quarter of that growth in health services. Jobs were also added in the transportation industry, but other service-producing industries showed little or no job gains.

Turning now to our household survey, employment also grew moderately in June. But in spite of more limited recent growth, the proportion of the population with jobs remains high; the economy continues to generate enough employment to keep up with the growth in the population.

---

[1] The employment decline we are reporting for June does not reflect the entire group out on strike, since some did not leave mine payrolls until after the June survey week had begun.

Unemployment in June showed little change among most of the major demographic groups. The one exception was joblessness among black women, especially black teenage girls, whose unemployment rate rose to 40 percent.

At the end of each quarter we report on discouraged workers. Although the number of discouraged workers was unchanged at 870,000 in the quarter in June, blacks continue to be disproportionately represented among the discouraged. Black workers make up 11 percent of the civilian labor force but represent one-quarter of the unemployed and more than a third of the discouraged.

While the overall unemployment rate for the country as a whole has held at a relatively low level, we should recognize that this global figure reflects widely varying local rates.

Now I have a chart—and we have one for you, Mr. Chairman, that I'd like to comment on. [Displaying chart.]

This is a chart which covers the year 1988. In 1988, when the overall average rate was 5.5 percent, local areas with unemployment rates higher than the national average formed a V-shaped band that stretched from Appalachia and the industrial Midwest, southwest to Louisiana and south Texas, and from there northwest through the Mountain States to western Oregon and Washington. In contrast, local unemployment rates were lower than average along much of the east coast, from southern Maine through North Carolina, and in several of the Plains States.

Differences in local unemployment rates generally reflect industrial structure. It is worth remembering that many of the east coast areas that now have lower-than-average unemployment had higher-than-average rates in the mid-1970's, when many traditional manufacturing industries were concentrated there. Now, in several parts of the Gulf States and the Southwest, we are seeing the problems caused by the downturn in oil and gas extraction. Employment shifts of this kind are a natural result of an evolving industrial structure. Thus, the distribution of unemployment that we will see in the future may be quite different from the pattern that we see today.

Now, in summary of this month's data: employment continued to grow moderately in June with most of the growth concentrated in the services industry. Factory jobs declined, and unemployment has shown little movement over the past year.

Mr. Chairman, we would be glad to try to answer any questions you have.

[The table attached to Mrs. Norwood's statement, together with the Employment Situation press release, follows:]

Unemployment rates of all civilian workers by alternative seasonal adjustment methods

Month and year	Unadjusted rate	X-11 ARIMA method						X-11 method (official method before 1980)	Range (cols. 2-8)
		Official procedure	Concurrent (as first computed)	Concurrent (revised)	Stable	Total	Residual		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1988									
June........	5.5	5.4	5.4	5.3	5.3	5.4	5.4	5.3	.1
July........	5.5	5.4	5.4	5.4	5.4	5.5	5.5	5.4	.1
August......	5.4	5.6	5.6	5.5	5.5	5.6	5.6	5.6	.1
September...	5.2	5.4	5.4	5.4	5.4	5.4	5.4	5.4	–
October.....	5.0	5.3	5.3	5.3	5.3	5.3	5.4	5.3	.1
November....	5.2	5.4	5.4	5.4	5.4	5.3	5.4	5.4	.1
December....	5.0	5.3	5.3	5.4	5.3	5.3	5.4	5.4	.1
1989									
January.....	6.0	5.4	5.4	5.4	5.5	5.4	5.3	5.5	.2
February....	5.6	5.1	5.2	5.2	5.2	5.2	5.0	5.2	.2
March.......	5.2	5.0	5.0	5.0	5.0	5.0	4.8	5.0	.2
April.......	5.1	5.3	5.3	5.3	5.3	5.3	5.3	5.3	–
May.........	5.0	5.2	5.2	5.2	5.2	5.1	5.3	5.1	.2
June........	5.5	5.3	5.3	5.3	5.2	5.4	5.4	5.3	.2

SOURCE: U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
July 1989

(1) Unadjusted rate. Unemployment rate for all civilian workers, not seasonally adjusted.

(2) Official procedure (X-11 ARIMA method). The published seasonally adjusted rate for all civilian workers. Each of the 3 major civilian labor force components--agricultural employment, nonagricultural employment and unemployment--for 4 age-sex groups--males and females, ages 16-19 and 20 years and over--are seasonally adjusted independently using data from January 1974 forward. The data series for each of these 12 components are extended by a year at each end of the original series using ARIMA (Auto-Regressive, Integrated, Moving Average) models chosen specifically for each series. Each extended series is then seasonally adjusted with the X-11 portion of the X-11 ARIMA program. The 4 teenage unemployment and nonagricultural employment components are adjusted with the additive adjustment model, while the other components are adjusted with the multiplicative model. The unemployment rate is computed by summing the 4 seasonally adjusted unemployment components and calculating that total as a percent of the civilian labor force total derived by summing all 12 seasonally adjusted components. All the seasonally adjusted series are revised at the end of each year. Extrapolated factors for January-June are computed at the beginning of each year; extrapolated factors for July-December are computed in the middle of the year after the June data become available. Each set of 6-month factors are published in advance, in the January and July issues, respectively, of Employment and Earnings.

(3) Concurrent (as first computed, X-11 ARIMA method). The official procedure for computation of the rate for all civilian workers using the 12 components is followed except that extrapolated factors are not used at all. Each component is seasonally adjusted with the X-11 ARIMA program each month as the most recent data become available. Rates for each month of the current year are shown as first computed; they are revised only once each year, at the end of the year when data for the full year become available. For example, the rate for January 1984 would be based, during 1984, on the adjustment of data from the period January 1974 through January 1984.

(4) Concurrent (revised, X-11 ARIMA method). The procedure used is identical to (3) above, and the rate for the current month (the last month displayed) will always be the same in the two columns. However, all previous months are subject to revision each month based on the seasonal adjustment of all the components with data through the current month.

(5) Stable (X-11 ARIMA method). Each of the 12 civilian labor force components is extended using ARIMA models as in the official procedure and then run through the X-11 part of the program using the stable option. This option assumes that seasonal patterns are basically constant from year-to-year and computes final seasonal factors as unweighted averages of all the seasonal-irregular components for each month across the entire span of the period adjusted. As in the official procedure, factors are extrapolated in 6-month intervals and the series are revised at the end of each year. The procedure for computation of the rate from the seasonally adjusted components is also identical to the official procedure.

(6) Total (X-11 ARIMA method). This is one alternative aggregation procedure, in which total unemployment and civilian labor force levels are extended with ARIMA models and directly adjusted with multiplicative adjustment models in the X-11 part of the program. The rate is computed by taking seasonally adjusted total unemployment as a percent of seasonally adjusted total civilian labor force. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(7) Residual (X-11 ARIMA method). This is another alternative aggregation method, in which total civilian employment and civilian labor force levels are extended using ARIMA models and then directly adjusted with multiplicative adjustment models. The seasonally adjusted unemployment level is derived by subtracting seasonally adjusted employment from seasonally adjusted labor force. The rate is then computed by taking the derived unemployment level as a percent of the labor force level. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(8) X-11 method (official method before 1980). The method for computation of the official procedure is used except that the series are not extended with ARIMA models and the factors are projected in 12-month intervals. The standard X-11 program is used to perform the seasonal adjustment.

Methods of Adjustment: The X-11 ARIMA method was developed at Statistics Canada by the Seasonal Adjustment and Times Series Staff under the direction of Estela Bee Dagum. The method is described in The X-11 ARIMA Seasonal Adjustment Method, by Estela Bee Dagum, Statistics Canada Catalogue No. 12-564E, February 1980.

The standard X-11 method is described in X-11 Variant of the Census Method II Seasonal Adjustment Program, by Julius Shiskin, Allan Young and John Musgrave (Technical Paper No. 15, Bureau of the Census, 1967).

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THE EMPLOYMENT SITUATION: JUNE 1989

Unemployment was little changed in June, and employment rose moderately, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. The overall unemployment rate was 5.2 percent and the civilian worker rate was 5.3 percent; they had been 5.1 and 5.2 percent, respectively, in May.

Nonagricultural payroll employment--as measured by the survey of business establishments--increased by 180,000 in June, seasonally adjusted, about in line with recent gains. However, the number of jobs in the goods-producing sector declined by 50,000. Total civilian employment--as measured by the survey of households--rose by 325,000 over the month.

Unemployment (Household Survey Data)

The number of unemployed persons, 6.6 million, and the civilian worker unemployment rate, 5.3 percent, were little changed in June, after seasonal adjustment. Both series were also at about the same levels as a year earlier. (See table A-2.)

The jobless rates for adult men (4.3 percent), adult women (4.9 percent), teenagers (15.6 percent), whites (4.5 percent), and Hispanics (8.1 percent) were essentially unchanged from the previous month. There was an increase in the rate for young adult workers (20-24 year-olds), from 7.7 to 8.9 percent. Black workers (11.9 percent) also experienced an increase in their unemployment rate, as there was a rise in joblessness among young black women. (See tables A-2, A-3, and A-9.)

The median duration of unemployment, at 5.5 weeks, was about unchanged from the previous month and was down only slightly over the year. Average (mean) duration of unemployment declined seven-tenths of a week in June to a seasonally adjusted level of 11.1 weeks. This measure has fallen by more than 2 weeks over the past year, largely due to a decline in the number of long-term unemployed. The number of newly unemployed persons, those jobless for less than 5 weeks, rose to 3.3 million in June, after having held at 3.0 or 3.1 million for most of the last year and a half. Paralleling this was an increase of 200,000 in unemployed reentrants to the labor force. (See tables A-7 and A-8.)

Civilian Employment and the Labor Force (Household Survey Data)

Civilian employment increased by 325,000 in June to a seasonally adjusted level of 117.5 million, as the employment-population ratio--the proportion of the population that is employed--reached a new high of 63.1 percent. Over the past year, employment has risen by 2.5 million. (See table A-2.)

Table A. Major indicators of labor market activity, seasonally adjusted

Category	Quarterly averages 1989 I	Quarterly averages 1989 II	Monthly data 1989 Apr.	Monthly data 1989 May	Monthly data 1989 June	May-June change
HOUSEHOLD DATA						
	Thousands of persons					
Labor force 1/..........	124,979	125,464	125,343	125,283	125,768	485
Total employment 1/...	118,588	118,964	118,797	118,888	119,207	319
Civilian labor force....	123,291	123,790	123,659	123,610	124,102	492
Civilian employment...	116,900	117,289	117,113	117,215	117,541	326
Unemployment..........	6,391	6,501	6,546	6,395	6,561	166
Not in labor force......	62,482	62,388	62,365	62,571	62,228	-343
Discouraged workers...	855	869	N.A.	N.A.	N.A.	N.A.
	Percent of labor force					
Unemployment rates:						
All workers 1/........	5.1	5.2	5.2	5.1	5.2	0.1
All civilian workers	5.2	5.3	5.3	5.2	5.3	.1
Adult men...........	4.5	4.4	4.6	4.3	4.3	0
Adult women.........	4.6	4.8	4.7	4.8	4.9	.1
Teenagers...........	15.0	15.1	14.4	15.2	15.6	.4
White...............	4.4	4.5	4.6	4.4	4.5	.1
Black...............	11.6	11.2	10.8	11.0	11.9	.9
Hispanic origin.....	7.2	8.1	8.3	7.9	8.1	.2
ESTABLISHMENT DATA						
	Thousands of jobs					
Nonfarm employment......	p107,680	p108,299	108,101	p108,308	p108,488	p180
Goods-producing.......	p25,634	p25,647	25,671	p25,661	p25,610	p-51
Service-producing.....	p82,047	p82,652	82,430	p82,647	p82,878	p231
	Hours of work					
Average weekly hours:						
Total private.........	34.7	p34.7	34.9	p34.6	p34.6	p 0
Manufacturing.........	41.1	p41.1	41.3	p41.0	p40.9	p-0.1
Overtime............	3.9	p3.8	3.9	p3.8	p3.8	p 0

1/ Includes the resident Armed Forces.
N.A.=not available.

p=preliminary

The civilian labor force increased by 490,000 in June to a seasonally adjusted level of 124.1 million. The labor force participation rate, at 66.6 percent, was at a record high. Over the year, the civilian labor force has risen by 2.5 million, 1.5 million of which occurred among adult women and 1.2 million among adult men. (See table A-2.)

Discouraged Workers (Household Survey Data)

The quarterly estimate of discouraged workers--persons who want to work but have not looked for jobs because they believe they cannot find any--was about unchanged in the April-June period, at a seasonally adjusted level of 870,000. Blacks accounted for 37 percent of discouraged workers, even though they make up only 11 percent of the civilian working-age population. (See table A-14.)

Industry Payroll Employment (Establishment Survey Data)

Total nonagricultural payroll employment rose by 180,000 in June to a level of 108.5 million, seasonally adjusted. This gain was about the same as the increase for the previous month, as revised, and occurred entirely within the service-producing sector. (See table B-1.)

In the goods sector, employment decreased by 50,000 in June, returning the job total to its January level. Manufacturing employment fell for the third consecutive month and was 50,000 below the March level. Employment in auto manufacturing was down by 15,000, as production was cut back because of large inventories. Employment in the electrical equipment industry continued its downward trend; since November, the industry has lost 30,000 jobs. There were also small but widespread over-the-month declines in other industries, particularly in the durable goods sector. One exception to this pattern of job loss was the machinery industry, where employment has continued to increase in each month of 1989, although at a slower pace than in 1988.

The number of mining jobs fell over the month, as about 10,000 workers were off payrolls for the entire reference period due to labor-management disputes. Construction employment was little changed for the second straight month.

The service-producing sector continued to show job gains. Employment in the services industry itself rose by 160,000 in June, with business and health services both posting large increases. Employment in the transportation industry, which had increased on a consistent basis for the last 3 years, rose by another 20,000. Insurance and real estate jobs continued to rise. After exhibiting strong-to-moderate growth during 1988 and early this year, employment levels were little changed in both wholesale and retail trade.

Weekly Hours (Establishment Survey Data)

Average weekly hours for production or nonsupervisory workers on private nonagricultural payrolls, at 34.6 hours in June, seasonally adjusted, were unchanged over the month. The manufacturing workweek decreased by 0.1 hour to 40.9 in June, while factory overtime (3.8 hours) was unchanged. (See table B-2.)

The index of aggregate weekly hours of production or nonsupervisory workers on private nonagricultural payrolls, at 127.8 (1977=100), increased by 0.2 percent, after seasonal adjustment. The index for manufacturing declined 0.3 percent to 96.2, due to the drop in both the hours and employment levels. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Both the average hourly and weekly earnings of private production or nonsupervisory workers were about unchanged in June, after seasonal adjustment. Prior to seasonal adjustment, average hourly earnings inched down by 1 cent to $9.58 and average weekly earnings increased by $1.57 to $332.43. Average hourly earnings rose 3.8 percent over the past year. (See tables B-3 and B-4.)

The Employment Situation for July 1989 will be released on Friday, August 4, at 8:30 A.M. (EDT).

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics Survey (establishment survey). The household survey provides the information on the labor force, total employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 55,800 households that is conducted by the Bureau of the Census with most of the findings analyzed and published by the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonagricultural payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. The sample includes over 300,000 establishments employing over 38 million people.

For both surveys, the data for a given month are actually collected for and relate to a particular week. In the household survey, unless otherwise indicated, it is the calendar week that contains the 12th day of the month, which is called the survey week. In the establishment survey, the reference week is the pay period including the 12th, which may or may not correspond directly to the calendar week.

The data in this release are affected by a number of technical factors, including definitions, survey differences, seasonal adjustments, and the inevitable variance in results between a survey of a sample and a census of the entire population. Each of these factors is explained below.

Coverage, definitions, and differences between surveys

The sample households in the household survey are selected so as to reflect the entire civilian noninstitutional population 16 years of age and older. Each person in a household is classified as employed, unemployed, or not in the labor force. Those who hold more than one job are classified according to the job at which they worked the most hours.

People are classified as *employed* if they did any work at all as paid civilians; worked in their own business or profession or on their own farm; or worked 15 hours or more in an enterprise operated by a member of their family, whether they were paid or not. People are also counted as employed if they were on unpaid leave because of illness, bad weather, disputes between labor and management, or personal reasons. Members of the Armed Forces stationed in the United States are also included in the employed total.

People are classified as *unemployed*, regardless of their eligibility for unemployment benefits or public assistance, if they meet all of the following criteria: They had no employment during the survey week; they were available for work at that time; and they made specific efforts to find employment sometime during the prior 4 weeks. Persons laid off from their former jobs and awaiting recall and those expecting to report to a job within 30 days need not be looking for work to be counted as unemployed.

The *labor force* equals the sum of the number employed and the number unemployed. The *unemployment rate* is the percentage of unemployed people in the labor force (civilian plus the resident Armed Forces). Table A-5 presents a special grouping of seven measures of unemployment based on varying definitions of unemployment and the labor force. The definitions are provided in the table. The most restrictive definition yields U-1 and the most comprehensive yields U-7. The overall unemployment rate is U-5a, while U-5b represents the same measure with a civilian labor force base.

Unlike the household survey, the establishment survey only counts wage and salary employees whose names appear on the payroll records of nonagricultural firms. As a result, there are many differences between the two surveys, among which are the following:

— The household survey, although based on a smaller sample, reflects a larger segment of the population; the establishment survey excludes agriculture, the self-employed, unpaid family workers, private household workers, and members of the resident Armed Forces;

— The household survey includes people on unpaid leave among the employed; the establishment survey does not;

— The household survey is limited to those 16 years of age and older; the establishment survey is not limited by age;

— The household survey has no duplication of individuals, because each individual is counted only once; in the establishment survey, employees working at more than one job or otherwise appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from the BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the Nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. For example, the labor force increases by a large number each June, when schools close and many young people enter the job market. The effect of such seasonal variation can be very large; over the course of a year, for example, seasonality may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. To return to the school's-out example, the large number of people entering the labor force each June is likely to obscure any other changes that have taken place since May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

Measures of labor force, employment, and unemployment contain components such as age and sex. Statistics for all employees, production workers, average weekly hours, and average hourly earnings include components based on the employer's industry. All these statistics can be seasonally adjusted either by adjusting the total or by adjusting each of the components and combining them. The second procedure usually yields more accurate information and is therefore followed by BLS. For example, the seasonally adjusted figure for the labor force is the sum of eight seasonally adjusted civilian employment components, plus the resident Armed Forces total (not adjusted for seasonality), and four seasonally adjusted unemployment components; the total for unemployment is the sum of the four unemployment components; and the overall unemployment rate is derived by dividing the resulting estimate of total unemployment by the estimate of the labor force.

The numerical factors used to make the seasonal adjustments are recalculated regularly. For the household survey, the factors are calculated for the January-June period and again for the July-December period. For the establishment survey, updated factors for seasonal adjustment are calculated for 6 months, along with the introduction of new benchmarks, which are discussed at the end of the next section, and again with the release of data for October. In both surveys, revisions to data published over the previous 5 years are made once a year.

Sampling variability

Statistics based on the household and establishment surveys are subject to sampling error, that is, the estimate of the number of people employed and the other estimates drawn from these surveys probably differ from the figures that would be obtained from a complete census, even if the same questionnaires and procedures were used. In the household survey, the amount of the differences can be expressed in terms of standard errors. The numerical value of a standard error depends upon the size of the sample, the results of the survey, and other factors. However, the numerical value is always such that the chances are approximately 68 out of 100 that an estimate based on the sample will differ by no more than the standard error from the results of a complete census. The chances are approximately 90 out of 100 that an estimate based on the sample will differ by no more than 1.6 times the standard error from the results of a complete census. At approximately the 90-percent level of confidence—the confidence limits used by BLS in its analyses—the error for the monthly change in total employment is on the order of plus or minus 358,000; for total unemployment it is 224,000, and, for the overall unemployment rate, it is 0.19 percentage point. These figures do not mean that the sample results are off by these magnitudes but, rather, that the chances are approximately 90 out of 100 that the "true" level or rate would not be expected to differ from the estimates by more than these amounts.

Sampling errors for monthly surveys are reduced when the data are cumulated for several months, such as quarterly or annually. Also, as a general rule, the smaller the estimate, the larger the sampling error. Therefore, relatively speaking, the estimate of the size of the labor force is subject to less error than is the estimate of the number unemployed. And, among the unemployed, the sampling error for the jobless rate of adult men, for example, is much smaller than is the error for the jobless rate of teenagers. Specifically, the error on monthly change in the jobless rate for men is .25 percentage point; for teenagers, it is 1.29 percentage points.

In the establishment survey, estimates for the 2 most current months are based on incomplete returns; for this reason, these estimates are labeled preliminary in the tables. When all the returns in the sample have been received, the estimates are revised. In other words, data for the month of September are published in preliminary form in October and November and in final form in December. To remove errors that build up over time, a comprehensive count of the employed is conducted each year. The results of this survey are used to establish new benchmarks—comprehensive counts of employment—against which month-to-month changes can be measured. The new benchmarks also incorporate changes in the classification of industries and allow for the formation of new establishments.

Additional statistics and other information

In order to provide a broad view of the Nation's employment situation, BLS regularly publishes a wide variety of data in this news release. More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $8.50 per issue or $25.00 per year from the U.S. Government Printing Office, Washington, D.C., 20204. A check or money order made out to the Superintendent of Documents must accompany all orders.

Employment and Earnings also provides approximations of the standard errors for the household survey data published in this release. For unemployment and other labor force categories, the standard errors appear in tables B through J of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables M, O, P, and Q of that publication.

Table A-1. Employment status of the population, including Armed Forces in the United States, by sex

(Numbers in thousands)

Employment status and sex	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1988	May 1989	June 1989^{p}	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
TOTAL									
Noninstitutional population[1]	186,247	187,854	187,995	186,247	187,461	187,581	187,708	187,854	187,995
Labor force[2]	124,713	124,868	127,236	123,209	124,865	124,948	125,343	125,283	125,768
Participation rate[3]	67.0	66.5	67.7	66.2	66.6	66.6	66.8	66.7	66.9
Total employed[2]	117,894	118,712	120,386	116,686	118,537	118,820	118,797	118,888	119,207
Employment-population ratio[4]	63.3	63.2	64.0	62.7	63.2	63.3	63.3	63.3	63.4
Resident Armed Forces	1,685	1,673	1,666	1,685	1,684	1,684	1,684	1,673	1,666
Civilian employed	116,209	117,039	118,719	115,001	116,853	117,136	117,113	117,215	117,541
Agriculture	3,546	3,284	3,494	3,121	3,223	3,206	3,104	3,112	3,096
Nonagricultural industries	112,663	113,755	115,226	111,880	113,630	113,930	114,009	114,102	114,445
Unemployed	6,819	6,156	6,850	6,523	6,328	6,128	6,546	6,395	6,561
Unemployment rate[5]	5.5	4.9	5.4	5.3	5.1	4.9	5.2	5.1	5.2
Not in labor force	61,534	62,986	60,760	63,038	62,596	62,633	62,365	62,571	62,228
Men, 16 years and over									
Noninstitutional population[1]	89,367	90,167	90,237	89,367	89,973	90,032	90,094	90,167	90,237
Labor force[2]	69,624	68,980	70,714	68,436	69,113	69,190	69,360	69,114	69,507
Participation rate[3]	77.9	76.5	78.4	76.6	76.8	76.9	77.0	76.7	77.0
Total employed[2]	65,996	65,731	67,230	64,894	65,572	65,920	65,767	65,713	66,110
Employment-population ratio[4]	73.8	72.9	74.5	72.6	72.9	73.2	73.0	72.9	73.3
Resident Armed Forces	1,523	1,511	1,501	1,523	1,521	1,521	1,521	1,511	1,501
Civilian employed	64,473	64,220	65,729	63,371	64,051	64,399	64,246	64,202	64,609
Unemployed	3,628	3,249	3,484	3,542	3,540	3,270	3,593	3,401	3,397
Unemployment rate[5]	5.2	4.7	4.9	5.2	5.1	4.7	5.2	4.9	4.9
Women, 16 years and over									
Noninstitutional population[1]	96,880	97,687	97,758	96,880	97,488	97,550	97,614	97,687	97,758
Labor force[2]	55,089	55,888	56,521	54,773	55,752	55,758	55,983	56,169	56,261
Participation rate[3]	56.9	57.2	57.8	56.5	57.2	57.2	57.4	57.5	57.6
Total employed[2]	51,898	52,981	53,156	51,792	52,965	52,900	53,029	53,175	53,097
Employment-population ratio[4]	53.6	54.2	54.4	53.5	54.3	54.2	54.3	54.4	54.3
Resident Armed Forces	162	162	165	162	163	163	163	162	165
Civilian employed	51,736	52,819	52,990	51,630	52,802	52,737	52,866	53,013	52,932
Unemployed	3,191	2,907	3,365	2,981	2,787	2,858	2,953	2,994	3,164
Unemployment rate[5]	5.8	5.2	6.0	5.4	5.0	5.1	5.3	5.3	5.6

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[1] The population and Armed Forces figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes members of the Armed Forces stationed in the United States.

[3] Labor force as a percent of the noninstitutional population.

[4] Total employment as a percent of the noninstitutional population.

[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

Table A-2. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
TOTAL									
Civilian noninstitutional population	184,562	186,181	186,329	184,562	185,777	185,897	186,024	186,181	186,329
Civilian labor force	123,028	123,196	125,569	121,524	123,181	123,264	123,659	123,610	124,102
Participation rate	66.7	66.2	67.4	65.8	66.3	66.3	66.5	66.4	66.6
Employed	116,209	117,039	118,719	115,001	116,853	117,136	117,113	117,215	117,541
Employment-population ratio[2]	63.0	62.9	63.7	62.3	62.9	63.0	63.0	63.0	63.1
Unemployed	6,819	6,156	6,850	6,523	6,328	6,128	6,546	6,395	6,561
Unemployment rate	5.5	5.0	5.5	5.4	5.1	5.0	5.3	5.2	5.3
Men, 20 years and over									
Civilian noninstitutional population	80,526	81,524	81,592	80,526	81,256	81,333	81,413	81,524	81,592
Civilian labor force	63,134	63,500	64,325	62,669	63,490	63,557	63,709	63,503	63,831
Participation rate	78.4	77.9	78.8	77.8	78.1	78.1	78.3	77.9	78.2
Employed	60,350	60,899	61,688	59,780	60,636	60,869	60,757	60,798	61,093
Employment-population ratio[2]	74.9	74.7	75.6	74.2	74.6	74.8	74.6	74.6	74.9
Agriculture	2,416	2,385	2,439	2,231	2,320	2,317	2,252	2,284	2,256
Nonagricultural industries	57,934	58,514	59,249	57,549	58,316	58,552	58,505	58,514	58,837
Unemployed	2,784	2,602	2,636	2,889	2,853	2,688	2,952	2,706	2,737
Unemployment rate	4.4	4.1	4.1	4.6	4.5	4.2	4.6	4.3	4.3
Women, 20 years and over									
Civilian noninstitutional population	89,502	90,432	90,526	89,502	90,153	90,242	90,318	90,432	90,526
Civilian labor force	50,420	52,078	51,918	50,690	51,821	51,851	51,992	52,171	52,231
Participation rate	56.3	57.6	57.4	56.6	57.5	57.5	57.6	57.7	57.7
Employed	47,972	49,682	49,392	48,205	49,514	49,484	49,544	49,690	49,661
Employment-population ratio[2]	53.6	54.9	54.6	53.9	54.9	54.8	54.9	54.9	54.9
Agriculture	704	669	684	626	666	664	615	628	610
Nonagricultural industries	47,268	49,013	48,708	47,579	48,849	48,819	48,929	49,062	49,051
Unemployed	2,448	2,396	2,526	2,485	2,306	2,367	2,448	2,480	2,570
Unemployment rate	4.9	4.6	4.9	4.9	4.5	4.6	4.7	4.8	4.9
Both sexes, 16 to 19 years									
Civilian noninstitutional population	14,534	14,224	14,211	14,534	14,367	14,323	14,293	14,224	14,211
Civilian labor force	9,474	7,617	9,326	8,165	7,871	7,856	7,958	7,936	8,040
Participation rate	65.2	53.6	65.6	56.2	54.8	54.9	55.7	55.8	56.6
Employed	7,887	6,459	7,639	7,016	6,703	6,783	6,812	6,726	6,786
Employment-population ratio[2]	54.3	45.4	53.8	48.3	46.7	47.4	47.7	47.3	47.8
Agriculture	425	232	371	264	237	224	237	200	230
Nonagricultural industries	7,461	6,227	7,268	6,752	6,466	6,559	6,575	6,526	6,556
Unemployed	1,587	1,158	1,687	1,149	1,168	1,073	1,146	1,210	1,254
Unemployment rate	16.8	15.2	18.1	14.1	14.8	13.7	14.4	15.2	15.6

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
WHITE									
Civilian noninstitutional population	158,166	159,200	159,297	158,166	158,947	159,020	159,098	159,200	159,297
Civilian labor force	106,015	105,898	107,762	104,716	105,798	105,988	106,312	106,164	106,455
Participation rate	67.0	66.5	67.6	66.2	66.6	66.7	66.8	66.7	66.8
Employed	101,069	101,412	102,869	99,902	101,278	101,554	101,458	101,465	101,693
Employment-population ratio[2]	63.9	63.7	64.6	63.2	63.7	63.9	63.8	63.7	63.8
Unemployed	4,946	4,486	4,893	4,814	4,521	4,434	4,854	4,699	4,762
Unemployment rate	4.7	4.2	4.5	4.6	4.3	4.2	4.6	4.4	4.5
Men, 20 years and over									
Civilian labor force	55,065	55,265	55,985	54,658	55,308	55,382	55,448	55,249	55,557
Participation rate	78.8	78.3	79.3	78.2	78.6	78.6	78.7	78.3	78.7
Employed	53,016	53,354	54,035	52,475	53,197	53,387	53,246	53,248	53,500
Employment-population ratio[2]	75.9	75.6	76.5	75.1	75.6	75.8	75.5	75.5	75.8
Unemployed	2,069	1,911	1,950	2,183	2,111	1,995	2,202	2,001	2,057
Unemployment rate	3.8	3.5	3.5	4.0	3.8	3.6	4.0	3.6	3.7
Women, 20 years and over									
Civilian labor force	42,742	44,039	43,847	42,955	43,770	43,780	44,016	44,084	44,050
Participation rate	55.9	57.1	56.9	56.2	56.9	56.9	57.2	57.2	57.1
Employed	41,018	42,324	42,067	41,201	42,177	42,115	42,207	42,282	42,236
Employment-population ratio[2]	53.7	54.9	54.6	53.9	54.8	54.7	54.8	54.9	54.8
Unemployed	1,724	1,716	1,780	1,754	1,593	1,665	1,810	1,803	1,814
Unemployment rate	4.0	3.9	4.1	4.1	3.6	3.8	4.1	4.1	4.1
Both sexes, 16 to 19 years									
Civilian labor force	8,188	6,593	7,931	7,103	6,720	6,826	6,848	6,831	6,848
Participation rate	69.0	57.0	68.6	59.8	57.7	58.7	59.0	59.0	59.2
Employed	7,034	5,734	6,768	6,226	5,904	6,052	6,005	5,936	5,957
Employment-population ratio[2]	59.3	49.6	58.5	52.5	50.7	52.1	51.8	51.3	51.5
Unemployed	1,154	859	1,163	877	816	774	843	895	891
Unemployment rate	14.1	13.0	14.7	12.3	12.1	11.3	12.3	13.1	13.0
Men	14.2	13.9	14.4	13.2	14.0	12.3	13.1	14.8	13.4
Women	13.9	12.0	15.0	11.4	10.2	10.2	11.5	11.2	12.6
BLACK									
Civilian noninstitutional population	20,683	20,986	21,012	20,683	20,905	20,930	20,956	20,986	21,012
Civilian labor force	13,231	13,372	13,751	13,066	13,476	13,425	13,287	13,444	13,600
Participation rate	64.0	63.7	65.4	63.2	64.5	64.1	63.4	64.1	64.7
Employed	11,597	11,882	12,023	11,543	11,873	11,961	11,846	11,968	11,982
Employment-population ratio[2]	56.1	56.6	57.2	55.8	56.8	57.1	56.5	57.0	57.0
Unemployed	1,634	1,491	1,728	1,523	1,603	1,464	1,442	1,476	1,618
Unemployment rate	12.4	11.1	12.6	11.7	11.9	10.9	10.8	11.0	11.9
Men, 20 years and over									
Civilian labor force	6,128	6,222	6,240	6,064	6,199	6,230	6,171	6,207	6,200
Participation rate	74.6	74.5	74.6	74.1	74.6	74.8	74.0	74.3	74.1
Employed	5,518	5,616	5,653	5,460	5,549	5,620	5,554	5,622	5,619
Employment-population ratio[2]	67.2	67.2	67.6	66.7	66.7	67.5	66.6	67.3	67.2
Unemployed	610	606	588	604	650	611	617	586	581
Unemployment rate	10.0	9.7	9.4	9.9	10.5	9.8	10.0	9.4	9.4
Women, 20 years and over									
Civilian labor force	6,043	6,293	6,343	6,097	6,349	6,315	6,227	6,340	6,405
Participation rate	58.7	60.2	60.6	59.3	61.0	60.5	59.6	60.6	61.2
Employed	5,405	5,694	5,680	5,449	5,697	5,739	5,677	5,740	5,732
Employment-population ratio[2]	52.5	54.4	54.2	53.0	54.7	55.0	54.3	54.9	54.7
Unemployed	638	599	663	648	651	576	550	600	674
Unemployment rate	10.6	9.5	10.5	10.6	10.3	9.1	8.8	9.5	10.5
Both sexes, 16 to 19 years									
Civilian labor force	1,061	857	1,168	885	928	880	889	897	994
Participation rate	48.6	39.4	53.7	40.6	42.7	40.5	40.9	41.3	45.7
Employed	673	572	690	614	627	602	615	606	631
Employment-population ratio[2]	30.8	26.3	31.7	28.1	28.8	27.7	28.3	27.9	29.0
Unemployed	387	285	478	271	301	278	274	291	363
Unemployment rate	36.5	33.3	40.9	30.6	32.4	31.6	30.8	32.4	36.5
Men	35.1	37.0	36.4	31.5	33.1	28.6	35.5	36.9	33.5
Women	38.2	29.5	46.4	29.6	31.6	34.8	26.2	28.4	40.2

See footnotes at end of table.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin—Continued

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1988	May 1989	June[1] 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
HISPANIC ORIGIN									
Civilian noninstitutional population	13,306	13,731	13,772	13,306	13,606	13,649	13,690	13,731	13,772
Civilian labor force	9,132	9,334	9,404	9,009	9,219	9,210	9,262	9,428	9,272
Participation rate	68.6	68.0	68.3	67.7	67.8	67.5	67.7	68.7	67.3
Employed	8,334	8,606	8,643	8,222	8,596	8,607	8,495	8,686	8,524
Employment-population ratio[2]	62.6	62.7	62.8	61.8	63.2	63.1	62.1	63.3	61.9
Unemployed	798	725	761	787	624	603	767	742	748
Unemployment rate	8.7	7.8	8.1	8.7	6.8	6.5	8.3	7.9	8.1

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
CHARACTERISTIC									
Civilian employed, 16 years and over	116,209	117,039	118,719	115,001	116,853	117,136	117,113	117,215	117,541
Married men, spouse present	40,606	40,984	41,225	40,493	40,928	41,083	40,890	40,902	41,102
Married women, spouse present	28,426	29,798	29,245	28,678	29,412	29,569	29,656	29,739	29,461
Women who maintain families	6,055	6,356	6,320	6,130	6,365	6,256	6,243	6,331	6,403
MAJOR INDUSTRY AND CLASS OF WORKER									
Agriculture:									
Wage and salary workers	1,662	1,718	1,818	1,583	1,645	1,656	1,554	1,610	1,550
Self-employed workers	1,466	1,411	1,504	1,375	1,419	1,403	1,419	1,358	1,412
Unpaid family workers	217	155	172	161	150	138	124	127	126
Nonagricultural industries:									
Wage and salary workers	103,780	104,878	106,357	102,953	104,797	104,962	104,985	105,245	105,519
Government	16,672	17,368	16,881	17,049	17,311	17,362	17,180	17,230	17,261
Private industries	87,108	87,510	89,476	85,904	87,486	87,600	87,806	88,015	88,259
Private households	1,227	1,158	1,220	1,146	1,135	1,163	1,117	1,128	1,140
Other industries	85,881	86,352	88,256	84,758	86,350	86,437	86,689	86,887	87,118
Self-employed workers	8,566	8,559	8,613	8,536	8,517	8,645	8,671	8,516	8,570
Unpaid family workers	315	318	255	297	285	332	281	322	241
PERSONS AT WORK PART TIME[1]									
All industries:									
Part time for economic reasons	5,785	4,624	5,413	5,302	4,981	4,966	5,143	4,837	4,957
Slack work	2,251	2,115	2,223	2,346	2,303	2,232	2,373	2,296	2,318
Could only find part-time work	3,059	2,200	2,713	2,586	2,333	2,393	2,425	2,343	2,289
Voluntary part time	13,013	16,082	13,736	14,612	15,126	15,561	15,496	15,316	15,416
Nonagricultural industries:									
Part time for economic reasons	5,492	4,411	5,199	5,073	4,697	4,709	4,930	4,609	4,601
Slack work	2,096	1,970	2,105	2,183	2,105	2,048	2,243	2,102	2,190
Could only find part-time work	2,935	2,142	2,625	2,504	2,272	2,317	2,369	2,301	2,236
Voluntary part time	12,520	15,850	13,240	14,180	14,688	15,127	15,060	14,976	14,977

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial dispute.

Table A-5. Range of unemployment measures based on varying definitions of unemployment and the labor force, seasonally adjusted

(Percent)

Measure	Quarterly averages					Monthly data		
	1988			1989		1989		
	II	III	IV	I	II	Apr.	May	June
U-1 Persons unemployed 15 weeks or longer as a percent of the civilian labor force	1.3	1.3	1.2	1.1	1.1	1.2	1.1	1.0
U-2 Job losers as a percent of the civilian labor force	2.5	2.5	2.5	2.4	2.3	2.4	2.2	2.2
U-3 Unemployed persons 25 years and over as a percent of the civilian labor force	4.2	4.2	4.1	4.0	4.0	4.1	4.0	4.0
U-4 Unemployed full-time jobseekers as a percent of the full-time civilian labor force	5.1	5.1	5.0	4.9	4.9	5.0	4.8	4.8
U-5a Total unemployed as a percent of the labor force, including the resident Armed Forces	5.4	5.4	5.3	5.1	5.2	5.2	5.1	5.2
U-5b Total unemployed as a percent of the civilian labor force	5.5	5.5	5.3	5.2	5.3	5.3	5.2	5.3
U-6 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons as a percent of the civilian labor force less 1/2 of the part-time labor force	7.6	7.6	7.5	7.2	7.2	7.4	7.1	7.2
U-7 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons plus discouraged workers as a percent of the civilian labor force plus discouraged workers less 1/2 of the part-time labor force	8.3	8.4	8.2	7.9	7.9	N.A.	N.A.	N.A.

N.A. = not available.

Table A-6. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
CHARACTERISTIC									
Total, 16 years and over	6,523	6,395	6,561	5.4	5.1	5.0	5.3	5.2	5.3
Men, 16 years and over	3,542	3,401	3,397	5.3	5.2	4.8	5.3	5.0	5.0
Men, 20 years and over	2,869	2,705	2,737	4.6	4.5	4.2	4.6	4.3	4.3
Women, 16 years and over	2,981	2,994	3,164	5.6	6.0	5.1	5.3	5.3	5.6
Women, 20 years and over	2,485	2,480	2,570	4.9	4.5	4.6	4.7	4.8	4.9
Both sexes, 16 to 19 years	1,149	1,210	1,254	14.1	14.8	13.7	14.4	15.2	15.6
Married men, spouse present	1,323	1,221	1,196	3.2	3.1	2.9	3.2	2.9	2.8
Married women, spouse present	1,156	1,189	1,177	3.9	3.4	3.5	4.0	3.8	3.8
Women who maintain families	525	576	549	7.9	8.0	7.9	7.6	8.3	7.9
Full-time workers	5,163	5,104	5,131	5.0	4.8	4.8	5.0	4.8	4.8
Part-time workers	1,341	1,242	1,413	7.7	7.3	6.2	7.2	6.9	7.7
Labor force time lost[2]	—	—	—	6.3	5.9	5.8	6.0	5.9	6.1
INDUSTRY									
Nonagricultural private wage and salary workers	4,916	4,832	4,971	5.4	5.1	5.0	5.4	5.2	5.3
Goods-producing industries	1,790	1,704	1,827	6.2	6.1	5.8	6.0	5.8	6.2
Mining	52	38	27	6.8	8.0	7.0	5.6	4.5	3.7
Construction	656	588	647	10.3	10.0	9.4	9.7	9.3	10.0
Manufacturing	1,083	1,078	1,154	4.9	4.9	4.6	4.9	4.9	5.2
Durable goods	596	577	600	4.5	4.4	4.7	4.7	4.5	4.6
Nondurable goods	487	500	554	5.5	5.5	4.9	5.2	5.5	6.1
Service-producing industries	3,126	3,129	3,145	5.1	4.7	4.6	5.1	4.8	4.9
Transportation and public utilities	264	262	264	4.1	3.9	3.9	4.0	4.0	4.4
Wholesale and retail trade	1,364	1,292	1,423	6.0	5.6	5.6	5.9	5.5	6.0
Finance and service industries	1,500	1,573	1,438	4.6	4.3	4.1	4.8	4.7	4.3
Government workers	501	520	526	2.9	2.7	2.6	2.7	2.9	3.0
Agricultural wage and salary workers	176	186	192	10.0	8.9	8.9	10.5	10.3	11.0

[1] Unemployment as a percent of the civilian labor force.

[2] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

Table A-7. Duration of unemployment

(Numbers in thousands)

Weeks of unemployment	Not seasonally adjusted			Seasonally adjusted					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
DURATION									
Less than 5 weeks	3,681	3,006	3,905	3,093	3,247	3,055	3,090	3,041	3,309
5 to 14 weeks	1,631	1,706	1,701	1,910	1,865	1,821	2,034	2,017	1,999
15 weeks and over	1,527	1,440	1,243	1,543	1,304	1,310	1,426	1,313	1,258
15 to 26 weeks	732	792	644	749	665	648	689	702	659
27 weeks and over	795	648	599	794	639	663	737	611	599
Average (mean) duration, in weeks	12.5	12.4	10.5	13.2	12.1	12.4	12.7	11.8	11.1
Median duration, in weeks	4.7	5.3	4.4	5.9	5.3	5.4	5.4	5.3	5.5
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	53.7	48.9	57.0	47.3	50.6	49.4	47.2	47.7	50.4
5 to 14 weeks	23.9	27.7	24.8	29.2	29.1	29.4	31.1	31.7	30.4
15 weeks and over	22.4	23.4	18.2	23.6	20.3	21.2	21.8	20.6	19.2
15 to 26 weeks	10.7	12.9	9.4	11.4	10.4	10.5	10.5	11.0	10.0
27 weeks and over	11.7	10.5	8.7	12.1	10.0	10.7	11.3	9.6	9.1

Table A-8. Reason for unemployment

(Numbers in thousands)

Reasons	Not seasonally adjusted			Seasonally adjusted					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
NUMBER OF UNEMPLOYED									
Job losers	2,848	2,601	2,563	3,070	2,876	2,831	2,984	2,724	2,765
On layoff	728	681	679	861	774	808	847	790	806
Other job losers	2,122	1,920	1,884	2,209	2,102	2,023	2,137	1,934	1,958
Job leavers	884	965	947	953	985	885	978	1,114	1,023
Reentrants	1,876	1,880	2,197	1,747	1,740	1,730	1,894	1,852	2,051
New entrants	1,210	710	1,143	800	765	713	671	683	742
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	41.7	42.3	37.4	46.7	45.2	46.0	45.7	42.7	42.0
On layoff	10.6	11.1	9.9	13.1	12.2	13.1	13.0	12.4	12.3
Other job losers	31.1	31.2	27.5	33.6	33.0	32.8	32.7	30.3	29.8
Job leavers	13.0	15.7	13.8	14.5	15.5	14.4	15.0	17.5	15.5
Reentrants	27.5	30.5	32.1	26.6	27.3	28.1	29.0	29.1	31.2
New entrants	17.8	11.5	16.7	12.2	12.0	11.6	10.3	10.7	11.3
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers	2.3	2.2	2.0	2.5	2.3	2.3	2.4	2.2	2.2
Job leavers	.7	.8	.8	.8	.8	.7	.8	.9	.8
Reentrants	1.5	1.5	1.7	1.4	1.4	1.4	1.5	1.5	1.7
New entrants	1.0	.8	.9	.7	.6	.6	.5	.6	.6

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Sex and age	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
Total, 16 years and over	6,523	6,395	6,581	5.4	5.1	5.0	5.3	5.2	5.3
16 to 24 years	2,394	2,303	2,544	10.5	10.5	9.8	10.5	10.4	11.3
16 to 19 years	1,149	1,210	1,254	14.1	14.8	13.7	14.4	15.2	15.6
16 to 17 years	527	509	535	15.9	18.2	15.3	14.9	16.2	17.5
18 to 19 years	622	701	737	13.3	12.7	12.5	13.8	14.5	14.9
20 to 24 years	1,245	1,093	1,290	8.5	8.1	7.7	8.4	7.7	8.9
25 years and over	4,146	4,074	4,036	4.2	4.0	3.9	4.1	4.0	4.0
25 to 54 years	3,675	3,626	3,503	4.4	4.2	4.1	4.4	4.2	4.1
55 years and over	450	453	515	3.0	3.1	2.6	2.9	2.9	3.3
Men, 16 years and over	3,542	3,401	3,397	5.3	5.2	4.8	5.3	5.0	5.0
16 to 24 years	1,302	1,270	1,358	11.0	11.1	9.7	10.7	11.0	11.5
16 to 19 years	653	696	660	15.4	16.7	14.2	15.5	17.0	15.8
16 to 17 years	301	301	323	17.5	19.6	15.8	17.0	18.8	20.0
18 to 19 years	363	390	347	14.3	15.1	13.2	14.6	15.7	13.6
20 to 24 years	649	574	698	8.5	8.1	7.2	8.0	7.7	9.2
25 years and over	2,259	2,099	2,057	4.1	4.0	3.8	4.2	3.7	3.7
25 to 54 years	1,961	1,845	1,768	4.2	4.1	4.0	4.4	3.9	3.7
55 years and over	278	258	270	3.2	3.4	2.8	3.2	2.9	3.0
Women, 16 years and over	2,981	2,994	3,164	5.5	5.0	5.1	5.3	5.3	5.6
16 to 24 years	1,092	1,034	1,186	10.0	9.7	10.0	10.4	9.8	11.0
16 to 19 years	496	514	594	12.6	12.8	13.1	13.2	13.4	15.4
16 to 17 years	226	199	212	14.1	16.8	14.8	12.7	13.4	14.7
18 to 19 years	279	311	382	12.1	10.0	11.7	12.8	13.3	16.2
20 to 24 years	596	520	592	8.6	8.0	8.3	8.9	7.7	8.6
25 years and over	1,887	1,975	1,979	4.3	3.9	4.0	4.1	4.4	4.4
25 to 54 years	1,714	1,782	1,736	4.6	4.2	4.3	4.4	4.6	4.5
55 years and over	172	195	245	2.8	2.5	2.3	2.6	3.0	3.8

[1] Unemployment as a percent of the civilian labor force.

Table A-10. Employment status of black and other workers

(Numbers in thousands)

Employment status	Not seasonally adjusted			Seasonally adjusted[1]					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
Civilian noninstitutional population	26,396	26,981	27,031	26,396	26,830	26,877	26,926	26,981	27,031
Civilian labor force	17,013	17,298	17,806	16,799	17,386	17,347	17,319	17,364	17,607
Participation rate	64.5	64.1	65.9	63.6	64.8	64.5	64.3	64.4	65.1
Employed	15,140	15,627	15,850	15,071	15,540	15,651	15,656	15,707	15,795
Employment-population ratio[2]	57.4	57.9	58.6	57.1	57.9	58.2	58.1	58.2	58.4
Unemployed	1,873	1,671	1,956	1,728	1,846	1,696	1,664	1,657	1,812
Unemployment rate	11.0	9.7	11.0	10.3	10.6	9.8	9.6	9.5	10.3
Not in labor force	9,383	9,683	9,225	9,597	9,444	9,530	9,607	9,617	9,424

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-11. Occupational status of the employed and unemployed, not seasonally adjusted

(Numbers in thousands)

Occupation	Civilian employed		Unemployed		Unemployment rate	
	June 1988	June 1989	June 1988	June 1989	June 1988	June 1989
Total, 16 years and over[1]	116,209	118,719	6,819	6,860	5.5	5.5
Managerial and professional specialty	29,181	30,070	601	620	2.0	2.0
Executive, administrative, and managerial	14,569	14,902	309	313	2.1	2.1
Professional specialty	14,612	15,168	292	307	2.0	2.0
Technical, sales, and administrative support	35,310	36,661	1,478	1,443	4.0	3.8
Technicians and related support	3,366	3,774	93	96	2.7	2.5
Sales occupations	13,865	14,288	664	610	4.6	4.1
Administrative support, including clerical	18,079	18,599	721	737	3.8	3.8
Service occupations	15,390	15,686	1,162	1,162	7.0	6.9
Private household	941	942	58	58	5.9	5.8
Protective service	1,970	1,944	70	58	3.4	2.9
Service, except private household and protective	12,479	12,801	1,034	1,046	7.6	7.5
Precision production, craft, and repair	14,087	14,182	711	735	4.8	4.9
Mechanics and repairers	4,582	4,564	150	162	3.2	3.4
Construction trades	5,400	5,418	361	391	6.3	6.7
Other precision production, craft, and repair	4,105	4,200	200	183	4.7	4.2
Operators, fabricators, and laborers	18,238	18,215	1,409	1,505	7.2	7.6
Machine operators, assemblers, and inspectors	8,346	8,226	592	647	6.6	7.3
Transportation and material moving occupations	4,902	4,861	282	266	5.4	5.2
Handlers, equipment cleaners, helpers, and laborers	4,990	5,128	535	592	9.7	10.4
Construction laborers	878	890	165	113	15.8	11.3
Other handlers, equipment cleaners, helpers, and laborers	4,113	4,238	370	478	8.3	10.1
Farming, forestry, and fishing	4,003	3,890	212	209	5.0	5.1

[1] Persons with no previous work experience and those whose last job was in the Armed Forces are included in the unemployed total.

Table A-12. Employment status of male Vietnam-era veterans and nonveterans by age, not seasonally adjusted

(Numbers in thousands)

Veteran status and age	Civilian noninstitutional population		Civilian labor force							
			Total		Employed		Unemployed			
							Number		Percent of labor force	
	June 1988	June 1989	June 1988	June 1989	June 1988	June 1989	June 1988	June 1989	June 1988	June 1989
VIETNAM-ERA VETERANS										
Total, 30 years and over	7,902	7,926	7,249	7,299	7,011	7,053	238	246	3.3	3.4
30 to 44 years	5,942	5,530	5,665	5,303	5,467	5,121	198	182	3.5	3.4
30 to 34 years	701	469	668	471	613	425	55	46	8.2	9.8
35 to 39 years	2,178	1,780	2,058	1,667	1,994	1,600	64	67	3.1	4.0
40 to 44 years	3,063	3,281	2,939	3,165	2,860	3,096	79	69	2.7	2.2
45 years and over	1,960	2,396	1,584	1,996	1,544	1,932	40	64	2.5	3.2
NONVETERANS										
Total, 30 to 44 years	20,367	21,418	19,190	20,290	18,469	19,594	721	696	3.8	3.4
30 to 34 years	9,079	9,357	8,596	8,964	8,232	8,607	364	357	4.2	4.0
35 to 39 years	6,799	7,404	6,434	6,986	6,202	6,786	232	200	3.6	2.9
40 to 44 years	4,489	4,657	4,160	4,340	4,035	4,201	125	139	3.0	3.2

NOTE: Male Vietnam-era veterans are men who served in the Armed Forces between August 5, 1964 and May 7, 1975. Nonveterans are men who have never served in the Armed Forces; published data are limited to those 30 to 44 years of age, the group that most closely corresponds to the bulk of the Vietnam-era veteran population.

Table A-13. Employment status of the civilian population for eleven large States

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
California									
Civilian noninstitutional population	20,828	21,085	21,122	20,828	21,018	21,037	21,058	21,085	21,122
Civilian labor force	14,079	14,259	14,356	14,006	14,117	14,120	14,096	14,331	14,286
Employed	13,313	13,524	13,570	13,231	13,405	13,480	13,339	13,546	13,489
Unemployed	766	736	786	775	712	640	757	785	797
Unemployment rate	5.4	5.2	5.5	5.5	5.0	4.5	5.4	5.5	5.6
Florida									
Civilian noninstitutional population	9,686	9,924	9,942	9,686	9,860	9,881	9,902	9,924	9,942
Civilian labor force	6,153	6,247	6,350	6,117	6,086	6,179	6,245	6,227	6,344
Employed	5,857	5,861	5,964	5,826	5,762	5,880	5,922	5,827	5,960
Unemployed	296	386	387	291	324	299	323	400	384
Unemployment rate	4.8	6.2	6.1	4.8	5.3	4.8	5.2	6.4	6.1
Illinois									
Civilian noninstitutional population	8,726	8,698	8,701	8,726	8,706	8,702	8,699	8,698	8,701
Civilian labor force	5,772	5,878	6,004	5,700	5,876	5,983	5,960	5,899	5,934
Employed	5,371	5,530	5,658	5,320	5,563	5,648	5,640	5,563	5,609
Unemployed	401	348	346	380	313	335	320	336	325
Unemployment rate	6.9	5.9	5.8	6.7	5.3	5.6	5.4	5.7	5.5
Massachusetts									
Civilian noninstitutional population	4,586	4,598	4,600	4,586	4,588	4,588	4,596	4,598	4,600
Civilian labor force	3,212	3,170	3,223	3,154	3,205	3,160	3,197	3,196	3,166
Employed	3,102	3,062	3,097	3,045	3,094	3,051	3,077	3,080	3,040
Unemployed	110	108	127	109	111	109	120	116	126
Unemployment rate	3.4	3.4	3.9	3.5	3.5	3.4	3.8	3.6	4.0
Michigan									
Civilian noninstitutional population	7,022	7,095	7,097	7,022	7,076	7,081	7,087	7,095	7,097
Civilian labor force	4,613	4,578	4,678	4,564	4,668	4,620	4,573	4,581	4,630
Employed	4,285	4,285	4,327	4,249	4,382	4,316	4,296	4,273	4,291
Unemployed	328	293	351	315	286	304	277	308	339
Unemployment rate	7.1	6.4	7.5	6.9	6.1	6.6	6.1	6.7	7.3
New Jersey									
Civilian noninstitutional population	6,036	6,059	6,062	6,036	6,053	6,055	6,057	6,059	6,062
Civilian labor force	4,022	3,972	4,038	3,957	4,043	4,010	3,977	3,952	3,971
Employed	3,876	3,852	3,872	3,810	3,884	3,890	3,816	3,834	3,806
Unemployed	147	120	166	147	159	120	161	118	165
Unemployment rate	3.6	3.0	4.1	3.7	3.9	3.0	4.0	3.0	4.2
New York									
Civilian noninstitutional population	13,787	13,809	13,812	13,787	13,807	13,806	13,807	13,809	13,812
Civilian labor force	8,570	8,587	8,771	8,506	8,701	8,540	8,841	8,770	8,705
Employed	8,280	8,139	8,360	8,190	8,258	8,173	8,328	8,307	8,266
Unemployed	290	448	411	316	443	367	513	463	439
Unemployment rate	3.4	5.2	4.7	3.7	5.1	4.3	5.8	5.3	5.0
North Carolina									
Civilian noninstitutional population	4,908	5,000	5,006	4,908	4,975	4,983	4,991	5,000	5,006
Civilian labor force	3,361	3,441	3,489	3,335	3,390	3,415	3,478	3,467	3,463
Employed	3,244	3,324	3,358	3,225	3,283	3,311	3,330	3,340	3,339
Unemployed	117	118	131	110	107	104	148	127	124
Unemployment rate	3.5	3.4	3.7	3.3	3.2	3.0	4.3	3.7	3.6
Ohio									
Civilian noninstitutional population	8,242	8,310	8,313	8,242	8,292	8,296	8,303	8,310	8,313
Civilian labor force	5,352	5,419	5,537	5,306	5,432	5,428	5,381	5,434	5,490
Employed	5,028	5,143	5,216	4,994	5,152	5,144	5,093	5,138	5,183
Unemployed	325	276	321	312	280	284	288	296	307
Unemployment rate	6.1	5.1	5.8	5.9	5.2	5.2	5.4	5.4	5.6

See footnotes at end of table.

Table A-12. Employment status of the civilian population for eleven large States—Continued

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	June 1988	May 1989	June 1989	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
Pennsylvania									
Civilian noninstitutional population	9,367	9,424	9,427	9,367	9,409	9,413	9,418	9,424	9,427
Civilian labor force	5,814	5,854	5,981	5,749	5,932	6,012	5,940	5,920	5,917
Employed	5,487	5,598	5,709	5,454	5,679	5,778	5,677	5,649	5,678
Unemployed	327	256	272	295	253	234	263	271	239
Unemployment rate	5.6	4.4	4.6	5.1	4.3	3.9	4.4	4.6	4.0
Texas									
Civilian noninstitutional population	12,011	11,967	11,980	12,011	11,954	11,961	11,966	11,967	11,980
Civilian labor force	8,557	8,233	8,333	8,461	8,254	8,283	8,350	8,250	8,223
Employed	7,874	7,744	7,745	7,863	7,703	7,788	7,729	7,762	7,721
Unemployed	683	489	588	598	551	495	621	488	502
Unemployment rate	8.0	5.9	7.1	7.1	6.7	6.0	7.4	5.9	6.1

[1] These are the official Bureau of Labor Statistics' estimates used in the administration of Federal fund allocation programs.

[2] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and the seasonally adjusted columns.

Table A-14. Persons not in the labor force by reason, sex, and race, quarterly averages

(In thousands)

Reason, sex, and race	Not seasonally adjusted		Seasonally adjusted				
	1988	1989	1988			1989	
	II	II	II	III	IV	I	II
TOTAL							
Total not in labor force	63,034	62,396	63,037	62,959	62,865	62,482	62,368
Do not want a job now	57,443	56,811	57,630	58,202	57,491	57,310	57,046
Current activity: Going to school	5,831	5,770	6,329	7,022	6,229	6,365	6,292
Ill, disabled	4,567	4,895	4,482	4,453	4,730	4,528	4,782
Keeping house	25,522	24,217	25,339	25,331	24,588	24,560	24,062
Retired	16,889	17,501	16,797	16,825	17,251	17,179	17,407
Other activity	4,614	4,428	4,683	4,571	4,693	4,666	4,503
Want a job now	5,590	5,584	5,318	5,276	5,418	5,313	5,331
Reason not looking: School attendance	1,698	1,658	1,286	1,387	1,412	1,279	1,274
Ill health, disability	842	969	832	794	750	910	965
Home responsibilities	1,175	1,120	1,209	1,128	1,145	1,177	1,151
Think cannot get a job	842	798	914	941	951	855	869
Job-market factors[1]	561	488	600	599	597	562	519
Personal factors[2]	281	310	314	341	354	293	350
Other reasons[3]	1,032	1,039	1,076	1,026	1,160	1,093	1,072
Men							
Total not in labor force	20,729	20,707	20,858	20,926	21,084	20,861	20,839
Do not want a job now	18,636	18,565	18,988	19,100	19,062	19,085	18,929
Want a job now	2,092	2,141	1,869	1,920	1,985	1,946	1,932
Reason not looking: School attendance	914	869	677	669	716	632	639
Ill health, disability	376	482	367	379	351	420	471
Think cannot get a job	379	374	414	447	446	410	410
Other reasons[3]	424	417	431	425	473	484	412
Women							
Total not in labor force	42,305	41,691	42,180	42,035	41,781	41,621	41,549
Do not want a job now	38,807	38,246	38,742	39,103	38,428	38,225	38,118
Want a job now	3,498	3,442	3,429	3,356	3,433	3,367	3,399
Reason not looking: School attendance	784	788	609	718	697	646	635
Ill health, disability	467	488	466	415	399	491	494
Home responsibilities	1,175	1,120	1,209	1,128	1,145	1,177	1,151
Think cannot get a job	463	424	500	494	505	445	460
Other reasons	609	622	645	601	688	609	660
White							
Total not in labor force	53,415	52,798	53,493	53,447	53,325	52,980	52,888
Do not want a job now	49,344	48,751	49,651	49,728	49,381	49,280	49,060
Want a job now	4,071	4,048	3,866	3,691	3,854	3,844	3,835
Reason not looking: School attendance	1,243	1,240	917	908	911	885	906
Ill health, disability	636	681	639	556	511	704	684
Home responsibilities	795	787	846	806	828	793	835
Think cannot get a job	554	485	596	600	676	570	527
Other reasons[3]	843	854	868	821	928	892	882
Black							
Total not in labor force	7,580	7,569	7,561	7,497	7,471	7,445	7,542
Do not want a job now	6,288	6,266	6,340	6,227	6,182	6,134	6,303
Want a job now	1,292	1,302	1,267	1,241	1,259	1,315	1,325
Reason not looking: School attendance	373	340	327	316	374	335	318
Ill health, disability	200	254	187	217	206	206	261
Home responsibilities	336	284	315	270	272	343	266
Think cannot get a job	231	274	276	290	210	253	323
Other reasons[3]	152	150	162	147	197	178	160

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[1] Job-market factors include "could not find job" and "thinks no job available."

[2] Personal factors include "employers think too young or old," "lacks education or training," and "other personal handicap."

[3] Includes small number of men not looking for work because of "home responsibilities."

Table B-1. Employees on nonagricultural payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	June 1988	Apr. 1989	May 1989p/	June 1989p/	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989p/	June 1989p/
Total	106,459	107,944	108,742	109,412	105,561	107,711	107,888	108,101	108,308	108,488
Total private	89,033	89,975	90,716	91,63[illegible]	88,199	90,124	90,291	90,475	90,625	90,773
Goods_producing industries	25,581	25,412	25,651	25,936	25,265	25,629	25,646	25,671	25,661	25,610
Mining	730	711	719	714	726	711	714	720	722	710
Oil and gas extraction	409.7	394.8	395.3	396.3	411	394	397	400	400	397
Construction	5,341	5,121	5,320	5,481	5,139	5,270	5,252	5,279	5,278	5,270
General building contractors	1,423.8	1,331.7	1,381.4	1,431.3	1,378	1,398	1,380	1,377	1,386	1,386
Manufacturing	19,510	19,580	19,612	19,741	19,400	19,648	19,680	19,672	19,661	19,630
Production workers	13,336	13,362	13,390	13,488	13,250	13,426	13,442	13,430	13,429	13,401
Durable goods	11,497	11,573	11,584	11,627	11,431	11,594	11,604	11,600	11,591	11,561
Production workers	7,683	7,727	7,730	7,769	7,630	7,749	7,749	7,744	7,738	7,716
Lumber and wood products	779.3	757.8	768.0	783.8	762	778	777	772	770	766
Furniture and fixtures	527.2	536.0	531.6	530.0	529	534	535	537	534	532
Stone, clay, and glass products	613.0	603.3	609.9	619.5	600	608	607	606	604	607
Primary metal industries	777.2	788.7	786.8	791.2	773	786	788	788	787	788
Blast furnaces and basic steel products	279.0	275.2	275.3	276.7	278	276	276	275	276	275
Fabricated metal products	1,432.6	1,449.5	1,450.6	1,454.6	1,432	1,458	1,457	1,454	1,452	1,447
Machinery, except electrical	2,087.1	2,148.4	2,152.6	2,162.1	2,077	2,138	2,143	2,144	2,148	2,151
Electrical and electronic equipment	2,074.8	2,047.8	2,040.5	2,044.9	2,072	2,062	2,062	2,058	2,051	2,043
Transportation equipment	2,060.0	2,075.1	2,075.6	2,064.5	2,053	2,067	2,071	2,073	2,074	2,058
Motor vehicles and equipment	863.2	876.7	879.6	869.6	855	871	869	875	876	861
Instruments and related products	751.7	775.7	777.3	782.1	748	772	776	777	779	778
Miscellaneous manufacturing	388.2	390.2	391.5	393.8	385	391	390	391	392	391
Nondurable goods	8,013	8,007	8,028	8,114	7,969	8,054	8,076	8,072	8,070	8,069
Production workers	5,653	5,635	5,651	5,719	5,620	5,677	5,693	5,686	5,691	5,685
Food and kindred products	1,638.8	1,600.4	1,615.3	1,659.7	1,633	1,650	1,655	1,657	1,655	1,655
Tobacco manufactures	52.3	51.4	49.2	49.7	56	56	56	54	53	53
Textile mill products	734.7	727.7	728.1	731.5	731	728	729	728	727	728
Apparel and other textile products	1,103.8	1,100.3	1,098.6	1,102.8	1,093	1,096	1,101	1,098	1,094	1,092
Paper and allied products	700.8	692.1	694.5	703.1	694	696	697	696	697	696
Printing and publishing	1,562.3	1,602.2	1,601.5	1,611.3	1,560	1,595	1,600	1,601	1,603	1,608
Chemicals and allied products	1,073.5	1,086.4	1,092.2	1,100.8	1,066	1,085	1,088	1,090	1,094	1,093
Petroleum and coal products	164.6	160.6	162.8	165.6	162	161	161	162	162	163
Rubber and misc. plastics products	835.7	844.5	845.5	845.2	830	843	845	843	843	839
Leather and leather products	146.2	141.8	142.3	143.8	144	144	144	143	142	142
Service-producing industries	80,878	82,532	83,091	83,482	80,296	82,082	82,242	82,430	82,647	82,878
Transportation and public utilities	5,579	5,649	5,699	5,759	5,542	5,667	5,666	5,682	5,700	5,721
Transportation	3,349	3,443	3,488	3,550	3,326	3,453	3,452	3,467	3,485	3,505
Communication and public utilities	2,230	2,206	2,211	2,229	2,215	2,214	2,214	2,215	2,215	2,216
Wholesale trade	6,062	6,186	6,217	6,265	6,027	6,171	6,197	6,206	6,222	6,229
Durable goods	3,579	3,669	3,685	3,706	3,561	3,657	3,676	3,676	3,685	3,688
Nondurable goods	2,483	2,517	2,532	2,559	2,466	2,514	2,521	2,530	2,537	2,541
Retail trade	19,263	19,275	19,524	19,701	19,096	19,460	19,488	19,489	19,524	19,525
General merchandise stores	2,399.5	2,404.9	2,417.1	2,419.4	2,459	2,481	2,490	2,492	2,492	2,479
Food stores	3,099.8	3,197.0	3,225.9	3,259.5	3,090	3,212	3,223	3,233	3,242	3,250
Automotive dealers and service stations	2,103.0	2,148.4	2,161.2	2,173.3	2,082	2,150	2,155	2,159	2,157	2,152
Eating and drinking places	6,493.1	6,316.0	6,459.7	6,576.9	6,283	6,332	6,322	6,335	6,345	6,367
Finance, insurance, and real estate	6,739	6,749	6,790	6,871	6,672	6,763	6,774	6,776	6,790	6,801
Finance	3,308	3,302	3,311	3,339	3,286	3,311	3,316	3,312	3,318	3,316
Insurance	2,087	2,117	2,123	2,134	2,081	2,116	2,117	2,119	2,123	2,128
Real estate	1,344	1,330	1,356	1,398	1,305	1,336	1,341	1,345	1,349	1,357
Services	25,809	26,704	26,835	27,102	25,597	26,434	26,520	26,651	26,728	26,887
Business services	5,594.8	5,719.5	5,760.8	5,829.7	5,567	5,729	5,736	5,760	5,778	5,801
Health services	7,150.0	7,512.8	7,552.8	7,639.6	7,123	7,442	7,488	7,528	7,568	7,609
Government	17,426	17,969	18,026	17,784	17,362	17,567	17,597	17,626	17,683	17,715
Federal	2,986	2,982	3,004	3,028	2,956	2,982	2,982	2,982	2,998	2,998
State	3,943	4,222	4,179	4,014	4,062	4,095	4,102	4,111	4,117	4,134
Local	10,497	10,765	10,843	10,742	10,344	10,510	10,513	10,533	10,568	10,583

p = preliminary.

Table B-2. Average weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	June 1988	Apr. 1989	May 1989p/	June 1989p/	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989p/	June 1989p/
Total private	34.9	34.8	34.5	34.7	34.7	34.6	34.7	34.9	34.6	34.6
Mining	42.5	42.8	42.1	42.3	(2)	(2)	(2)	(2)	(2)	(2)
Construction	38.7	37.9	37.7	37.9	(2)	(2)	(2)	(2)	(2)	(2)
Manufacturing	41.2	41.0	40.9	41.0	41.1	41.1	41.0	41.3	41.0	40.9
Overtime hours	3.9	3.8	3.6	3.8	3.9	3.9	4.0	3.9	3.8	3.8
Durable goods	42.0	41.7	41.5	41.6	41.8	41.8	41.7	41.9	41.5	41.5
Overtime hours	4.1	3.9	3.8	3.9	4.1	4.1	4.1	4.1	3.9	3.9
Lumber and wood products	40.9	40.5	40.1	40.5	40.2	39.6	40.0	40.5	39.7	39.9
Furniture and fixtures	39.4	39.3	39.0	39.4	39.4	39.7	39.8	39.9	39.4	39.4
Stone, clay, and glass products	42.8	42.6	42.4	42.3	42.4	42.2	42.2	42.5	41.9	41.9
Primary metal industries	43.7	43.2	43.1	43.1	43.6	43.4	43.5	43.3	43.2	43.1
Blast furnaces and basic steel products	44.5	43.6	43.6	43.6	44.2	43.8	44.1	43.5	43.6	43.4
Fabricated metal products	42.2	41.7	41.5	41.6	42.0	41.9	41.8	41.9	41.7	41.4
Machinery, except electrical	42.7	42.5	42.3	42.5	42.6	42.6	42.5	42.7	42.5	42.4
Electrical and electronic equipment	41.1	40.7	40.4	40.7	41.0	40.9	40.6	41.0	40.7	40.6
Transportation equipment	43.0	43.0	42.7	42.6	42.9	43.1	43.1	42.8	42.5	42.5
Motor vehicles and equipment	44.2	43.7	43.3	43.2	43.9	43.9	43.9	43.3	42.8	42.9
Instruments and related products	41.4	41.3	40.9	41.1	41.4	41.5	41.1	41.5	41.2	41.1
Miscellaneous manufacturing	39.4	39.6	39.3	39.1	39.4	39.3	39.5	39.8	39.5	39.1
Nondurable goods	40.1	40.1	40.1	40.2	40.1	40.2	40.1	40.4	40.2	40.2
Overtime hours	3.6	3.5	3.5	3.7	3.6	3.7	3.8	3.8	3.7	3.7
Food and kindred products	40.3	40.0	40.5	40.7	40.3	40.3	40.4	40.7	40.6	40.7
Tobacco manufactures	39.8	38.1	39.5	38.7	(2)	(2)	(2)	(2)	(2)	(2)
Textile mill products	41.0	41.2	41.2	41.6	40.8	40.8	41.1	41.7	41.4	41.4
Apparel and other textile products	37.3	37.1	37.0	37.3	37.0	37.1	36.9	37.6	37.1	37.0
Paper and allied products	43.1	43.1	43.1	43.1	43.2	43.2	43.3	43.4	43.3	43.2
Printing and publishing	37.6	37.8	37.4	37.5	38.0	38.0	37.9	37.9	37.7	37.9
Chemicals and allied products	42.4	42.5	42.2	42.3	42.4	42.3	42.3	42.6	42.2	42.3
Petroleum and coal products	45.1	44.3	43.7	43.3	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and misc. plastics products	41.8	41.5	41.5	41.6	41.7	41.7	41.6	41.6	41.5	41.5
Leather and leather products	37.9	37.8	37.6	38.7	37.1	38.6	38.0	38.3	37.4	37.9
Transportation and public utilities	39.5	39.8	39.4	39.8	39.4	39.4	39.4	40.1	39.6	39.6
Wholesale trade	38.1	38.2	37.9	38.1	38.0	38.1	38.1	38.3	37.9	38.0
Retail trade	29.4	28.9	28.8	29.2	29.1	28.9	28.9	29.1	28.9	28.9
Finance, insurance, and real estate	35.8	36.3	35.6	35.8	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.7	32.8	32.4	32.6	32.5	32.5	32.6	32.8	32.5	32.4

1/ Data relate to production workers in mining and manufacturing; construction workers in construction; and nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance; insurance, and real estate; and services. These groups account for approximately four-fifths of the total employees on private nonagricultural payrolls.

2/ These series are not published seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficent precision.
p = preliminary.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	June 1988	Apr. 1989	May 1989p/	June 1989p/	June 1988	Apr. 1989	May 1989p/	June 1989p/
Total private	$9.23	$9.62	$9.59	$9.58	$322.13	$334.78	$330.86	$332.43
Seasonally adjusted	9.27	9.61	9.61	9.62	321.67	335.39	332.51	332.85
Mining	12.61	13.19	13.14	13.10	535.93	564.53	553.19	554.13
Construction	12.89	13.30	13.29	13.27	498.84	504.07	501.03	502.93
Manufacturing	10.16	10.41	10.42	10.44	418.59	426.81	426.18	428.04
Durable goods	10.70	10.93	10.94	10.97	449.40	455.78	454.01	456.35
Lumber and wood products	8.60	8.76	8.78	8.87	351.74	354.78	352.08	359.24
Furniture and fixtures	7.93	8.12	8.15	8.21	312.44	319.12	317.85	323.47
Stone, clay, and glass products	10.47	10.71	10.70	10.73	448.12	456.25	453.68	453.88
Primary metal industries	12.14	12.26	12.25	12.27	530.52	529.63	527.98	528.84
Blast furnaces and basic steel products	13.95	14.06	14.05	13.98	620.78	633.02	612.58	609.53
Fabricated metal products	10.29	10.48	10.50	10.49	434.24	437.02	435.75	436.38
Machinery, except electrical	10.97	11.26	11.28	11.34	468.42	478.55	477.14	481.95
Electrical and electronic equipment	10.15	10.31	10.33	10.35	417.17	419.62	417.33	421.25
Transportation equipment	13.30	13.60	13.57	13.67	571.90	584.80	579.44	582.34
Motor vehicles and equipment	14.09	14.20	14.15	14.25	622.78	620.54	612.70	615.60
Instruments and related products	9.90	10.17	10.17	10.20	409.86	420.02	415.95	419.22
Miscellaneous manufacturing	7.96	8.21	8.26	8.27	313.62	325.12	324.62	323.36
Nondurable goods	9.40	9.65	9.68	9.70	376.94	386.97	388.17	389.94
Food and kindred products	9.11	9.32	9.34	9.38	367.13	372.80	378.27	381.77
Tobacco manufactures	15.92	15.87	16.13	16.63	633.62	604.65	637.14	643.58
Textile mill products	7.33	7.60	7.62	7.64	300.53	313.12	313.94	317.82
Apparel and other textile products	6.10	6.32	6.32	6.35	227.53	234.47	233.84	236.86
Paper and allied products	11.66	11.83	11.89	11.93	502.55	509.87	512.46	514.18
Printing and publishing	10.43	10.73	10.76	10.72	392.17	405.59	402.42	402.00
Chemicals and allied products	12.60	12.92	12.99	13.06	534.24	549.10	548.18	552.44
Petroleum and coal products	14.96	15.50	15.36	15.19	674.70	686.65	671.23	657.73
Rubber and misc. plastics products	9.10	9.35	9.40	9.41	380.38	388.03	390.10	391.46
Leather and leather products	6.26	6.55	6.57	6.53	237.25	247.59	247.03	252.71
Transportation and public utilities	12.27	12.51	12.50	12.48	484.67	497.90	492.50	496.70
Wholesale trade	9.88	10.36	10.27	10.28	376.43	395.75	389.23	391.67
Retail trade	6.27	6.52	6.49	6.49	184.34	188.43	186.91	189.51
Finance, insurance, and real estate	8.97	9.59	9.47	9.44	321.13	348.12	337.13	337.95
Services	8.79	9.36	9.31	9.25	287.43	306.35	301.64	301.55

1/ See footnote 1, table B-2.

p = preliminary.

Table B-4. Average hourly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry, seasonally adjusted

Industry	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989p/	June 1989p/	Percent change from: May 1989-June 1989
Total private2/:							
Current dollars	$9.27	$9.52	$9.54	$9.61	$9.61	$9.62	0.1
Constant (1977) dollars3/	4.84	4.81	4.80	4.80	4.77	N.A.	(4)
Construction	12.97	13.22	13.26	13.33	13.33	13.35	.2
Manufacturing	10.18	10.37	10.40	10.40	10.42	10.45	.3
Excluding overtime5/	9.71	9.89	9.92	9.92	9.97	9.99	.2
Transportation and public utilities	12.32	12.48	12.50	12.52	12.55	12.54	-.1
Wholesale trade	9.90	10.18	10.21	10.36	10.27	10.30	.3
Retail trade	6.30	6.45	6.47	6.51	6.49	6.52	.5
Finance, insurance, and real estate	9.01	9.35	9.36	9.54	9.44	9.49	.5
Services	8.87	9.19	9.24	9.32	9.34	9.33	-.1

1/ See footnote 1, table B-2.

2/ Includes mining, not shown separately, because its seasonal component is too small to be separated out with sufficient precision.

3/ The Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) is used to deflate this series.

4/ Change was -0.6 percent from April to May 1989, the latest month available.

5/ Derived by assuming that overtime hours are paid at the rate of time and one-half.

N.A. = not available.

p/ = preliminary.

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

(1977=100)

Industry	Not seasonally adjusted				Seasonally adjusted					
	June 1988	Apr. 1989	May 1989p/	June 1989p/	June 1988	Feb. 1989	Mar. 1989	Apr. 1989	May 1989p/	June 1989p/
Total private	126.9	127.4	127.5	129.8	124.8	127.2	127.6	128.7	127.6	127.8
Goods-producing industries	103.9	101.8	102.6	104.2	101.8	102.9	102.9	103.5	102.4	102.2
Mining	83.5	81.6	81.2	80.7	83.0	80.1	81.1	83.4	81.8	80.1
Construction	147.7	136.1	141.7	147.3	138.7	140.5	140.3	141.0	138.1	138.5
Manufacturing	96.4	96.1	96.0	97.0	95.5	96.7	96.7	97.2	96.5	96.2
Durable goods	94.7	94.7	94.2	94.9	93.7	95.0	94.9	95.2	94.4	93.9
Lumber and wood products	108.4	103.6	104.3	107.5	104.0	104.5	105.3	105.9	103.5	103.4
Furniture and fixtures	111.1	112.6	111.0	111.8	111.8	113.7	114.3	114.6	113.1	112.3
Stone, clay, and glass products	93.3	90.9	91.7	92.9	90.0	90.9	90.5	91.0	89.5	89.7
Primary metal industries	68.5	68.6	68.1	68.5	67.9	68.7	68.9	68.6	68.2	68.2
Blast furnaces and basic steel products	55.0	53.0	52.9	53.1	54.6	53.4	53.6	52.4	52.3	51.8
Fabricated metal products	92.3	91.4	91.1	91.6	91.3	92.8	92.5	92.2	91.7	90.7
Machinery, except electrical	90.6	93.8	93.7	94.5	90.0	93.7	93.4	93.9	93.9	93.8
Electrical and electronic equipment	100.8	98.4	97.1	98.3	100.6	99.9	98.8	99.7	98.5	98.1
Transportation equipment	100.9	102.0	101.3	100.0	100.2	101.0	101.5	101.2	100.3	99.2
Motor vehicles and equipment	91.9	92.3	91.8	90.2	90.9	91.1	91.7	91.1	90.3	88.7
Instruments and related products	112.6	115.7	115.2	116.5	111.8	115.6	115.0	116.4	116.1	115.8
Miscellaneous manufacturing	86.1	86.4	85.9	86.2	85.3	86.4	86.1	87.1	86.4	85.5
Nondurable goods	98.8	98.3	98.6	100.2	98.2	99.3	99.5	100.1	99.6	99.5
Food and kindred products	101.0	97.6	99.9	103.7	100.8	102.2	102.9	103.8	103.6	103.7
Tobacco manufactures	71.2	66.1	64.5	62.9	75.7	74.1	69.6	73.0	69.6	66.5
Textile mill products	81.6	81.2	81.2	82.4	80.7	80.4	81.0	82.1	81.5	81.5
Apparel and other textile products	86.1	85.9	85.5	86.5	84.6	85.5	85.4	86.8	85.3	84.9
Paper and allied products	103.0	100.9	101.5	103.2	102.1	101.9	102.3	102.4	102.3	102.1
Printing and publishing	134.7	138.5	136.9	137.8	136.1	138.4	138.5	138.2	137.8	139.0
Chemicals and allied products	99.2	100.6	100.5	101.6	98.5	100.0	100.4	100.9	100.8	100.7
Petroleum and coal products	86.6	82.3	83.0	84.2	83.7	83.3	82.2	82.9	83.1	81.8
Rubber and misc. plastics products	118.7	119.8	119.7	119.9	117.6	120.0	119.9	119.9	119.6	118.9
Leather and leather products	56.8	55.1	55.0	57.4	54.8	57.0	56.1	56.0	54.7	55.5
Service-producing industries	139.7	141.5	141.4	143.9	137.6	140.6	141.2	142.6	141.5	141.9
Transportation and public utilities	114.4	117.0	117.1	119.3	113.4	116.2	116.2	118.6	117.6	117.9
Wholesale trade	124.0	126.2	126.2	127.9	122.7	125.9	126.4	127.2	126.1	126.7
Retail trade	127.9	125.1	126.6	129.4	125.4	126.7	126.9	127.7	127.1	127.1
Finance, insurance, and real estate	142.1	142.9	141.4	144.2	140.2	140.8	141.8	143.8	141.9	142.5
Services	163.5	169.2	167.8	170.6	160.9	166.1	167.3	168.9	167.6	168.1

1/ See footnote 1, table B-2.

p = preliminary.

Table B-6. Diffusion indexes of employment change, seasonally adjusted

(Percent)

Time span	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
	Private nonagricultural payrolls, 349 industries1/											
Over 1-month span:												
1987	55.6	59.3	61.0	61.9	58.6	59.7	63.3	60.6	63.0	67.8	64.5	60.7
1988	60.7	63.5	63.0	62.8	61.3	67.2	63.6	58.0	55.4	63.9	68.2	64.6
1989	68.3	60.5	61.0	58.2	p/56.3	p/54.3						
Over 3-month span:												
1987	60.7	62.0	66.6	65.2	65.8	65.9	67.8	71.1	71.2	72.3	70.9	65.9
1988	64.8	65.6	69.5	70.2	71.1	71.9	71.2	64.2	65.3	70.1	73.4	74.6
1989	71.6	70.1	64.5	p/61.9	p/59.0							
Over 6-month span:												
1987	67.3	63.8	64.8	66.8	67.6	69.5	71.3	73.5	73.2	71.5	71.8	72.2
1988	69.9	70.2	71.5	73.9	73.9	69.1	70.2	74.6	73.5	73.9	74.5	75.8
1989	75.1	p/69.9	p/66.2									
Over 12-month span:												
1987	66.6	68.2	68.2	71.8	71.9	72.5	72.2	74.1	73.4	72.5	73.8	76.9
1988	76.2	76.1	74.8	74.6	75.8	74.9	78.1	75.5	75.5	74.8	p/75.2	p/73.1
1989												
	Manufacturing payrolls, 143 industries1/											
Over 1-month span:												
1987	44.3	53.9	54.3	55.7	55.3	54.3	62.8	59.9	63.8	59.9	65.6	56.4
1988	58.5	56.0	55.0	59.9	58.5	61.7	59.6	51.1	49.3	62.8	64.9	58.5
1989	62.4	53.5	53.2	49.6	p/46.8	p/48.6						
Over 3-month span:												
1987	52.1	51.4	59.6	61.3	58.5	62.8	67.0	71.6	68.4	70.6	67.7	64.5
1988	63.1	61.0	62.4	64.9	67.4	67.0	64.5	58.2	62.1	66.7	71.3	70.9
1989	67.4	63.8	55.7	p/51.4	p/47.5							
Over 6-month span:												
1987	57.4	56.7	55.3	62.4	64.9	67.0	67.4	70.6	71.3	69.5	69.5	68.1
1988	66.3	66.3	67.7	69.5	66.7	64.2	66.0	70.9	68.8	69.9	71.6	74.1
1989	69.5	p/58.2	p/54.3									
Over 12-month span:												
1987	55.3	58.5	58.5	63.5	66.3	67.4	71.6	72.7	71.6	69.1	68.4	72.3
1988	73.8	70.2	70.9	71.6	72.0	69.9	70.9	69.1	71.6	70.2	p/69.9	p/65.6
1989												

1/ Based on seasonally adjusted data for 1-, 3-, and 6-month spans and unadjusted data for the 12-month span. Data are centered within the span.

p = preliminary.

NOTE: Figures are the percent of industries with employment increasing plus one-half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing employment.

Representative **Hamilton**. Thank you very much for your report. I guess I'm impressed that, in looking at the economic news in recent days, we seem to be getting new evidence of a slowdown in the economy each day. What do the unemployment figures tell us with respect to a slowdown in the economy?

Mrs. **Norwood**. The unemployment figures are telling us that there is still continued growth. The drop in factory jobs clearly shows an increase in unemployment for workers employed in manufacturing. The service producing economy is still gaining jobs, but, in general, I would say that the labor market is continuing to hold its own but with much slower rates of growth than we have seen in recent years.

Representative **Hamilton**. Has that been the pattern through the year now, the first 6 months?

Mrs. **Norwood**. Well generally, but in particular since February, the past 4 months.

Representative **Hamilton**. Now you say in your statement that unemployment has shown little movement over the past year. What about the growth in jobs, has that been fairly steady, too, throughout the year?

Mrs. **Norwood**. In January and February we were still seeing considerable growth, but for the last 4 months there has been a slowdown.

Representative **Hamilton**. When you put these various indicators together, what is the chief threat to the American economy now, inflation or recession?

Mrs. **Norwood**. The slowing of growth which is shown by employment and many of the other indicators suggests that there has been an attempt to restrain inflationary pressures by cooling down the economy and, therefore, we are not seeing a crescendoing increase in inflation. We still, however, have annual rates of 5 to 6 percent in our major price indexes and so we're not out of the woods yet, very clearly.

Representative **Hamilton**. Your answer seems to suggest that you're more worried about inflation than you are about recession.

Mrs. **Norwood**. I am concerned about inflation. I'm also concerned that we not take steps to cool inflation that are so strong that we push the economy into recession. I don't see that happening now; we are still having growth.

Representative **Hamilton**. Do you think we have enough information at this point about the economy to say with confidence that we are going to achieve a soft landing and not go into a recession?

Mrs. **Norwood**. For the time being——

Representative **Hamilton**. I know these are very easy questions, Commissioner. [Laughter.]

Mrs. **Norwood**. They are also questions which hundreds of people have been commenting on in recent months.

Representative **Hamilton**. I want to just say that you have a particular perspective on it and I'm not asking you to make predictions, I know that's not your field.

Mrs. **Norwood**. I understand that.

Representative **Hamilton**. But you are as familiar as anybody, you and your colleagues, with the statistics and the indicators and you can give us some sense of where you think the indicators lead us—or maybe they don't lead us anywhere, I know that's true oftentimes.

Mrs. **Norwood**. I believe that the data we have thus far are showing enough of a slowing so that we should not see too much heating up of inflation.

I also believe that thus far at least they are not suggesting a real downturn. So we're coasting along, as you indicated, but we do still have growth; we had a 160,000 increase in employment in the service industry itself.

I would say that we do have to be concerned about the international area, since the dollar is quite strong and it clearly is beginning to affect our export industries.

Representative **Hamilton**. Now in reviewing one of the newspapers this week, I noticed that most of our economists are saying that the average forecast for real growth in the second half of this year will be 1.5 percent. Let's assume that they're right and that we will have growth of about 1.5 percent for the balance of the year or for the next year.

What would that do to the unemployment rate if the forecasters are correct? Would that raise the unemployment rate a half a percentage point?

Mrs. **Norwood**. If they are correct and if the labor force continues to grow at the level that it has over the last year of about a 2.5 million, then the unemployment rate is likely to rise.

Representative **Hamilton**. You've said in the past that it takes about a 2.5- to 3-percent growth to keep the unemployment rate from rising.

Mrs. **Norwood**. That's the general wisdom. I'm not sure that that's exact. But certainly it takes more than 1 or 1.5 percent of growth, assuming that the labor force continues to behave as it has in the past.

Representative **Hamilton**. So, that if we had this below-average growth figure, then you'd expect some increase in the unemployment rate.

If you had that situation, what population groups would be hurt most by a period of rising unemployment and slow growth?

Mrs. **Norwood**. The disadvantaged groups of the population are always hurt more than others. They tend to have the least training, they have the least seniority, and when there are economic downturns, it is minority workers who generally are laid off first.

Representative **Hamilton**. What would happen to your chart here in the event of that—in that scenario? Do you think that would change much?

Mrs. **Norwood**. What generally happens as we move into periods of higher unemployment is that the pockets of unemployment that we see on that chart, the red areas, tend to move outward.

And I would expect that if that were to happen—and I'm certainly not predicting that it will—that we will fill in that V, the bands of that V shape will be considerably broader, and we may see some darkening of some of the lighter areas there.

It depends in part upon where unemployment would occur, and what industries the unemployment would occur in.

Representative **Hamilton**. But you would expect if you did have growth of 1.5 percent for the balance of the year as predicted by the forecasters, that this chart would basically hold correct, that is, unemployment would be higher in this V-shaped area that you described, is that right? Those are the regions of the country that would be hit the most?

Mrs. NORWOOD. Yes, I would expect that. But, as you know, most of the forecasters are projecting a 5.5 percent, or I think at most a 5.8 percent rate of unemployment. I am not sure that that kind of movement would lead to a very great change in a map of this kind.

Representative HAMILTON. You summarized in your statement the employment situation for June. Let me ask you to summarize it for the first half of 1989. How would you describe the employment-unemployment data for the first half of the year?

Mrs. NORWOOD. The employment situation for the first half of 1989 showed a greater slowdown than we had experienced during 1988, and I think what we're seeing, in particular, is a turnaround in factory jobs. In 1987 and 1988, we had an expansion in export markets. We are beginning to see a little bit more of a contraction there.

And then we have a particular situation in the automobile industry, where there is a clear oversupply of autos which was not helped very much by the incentive arrangements that they had. So, we're seeing automobile industries announcing and, in fact, curtailing some of their operations.

We're also seeing now some effect of the tightening in construction, but I think that as interest rates loosen construction activities should pick up.

Representative HAMILTON. And I noted in your statement the unemployment rate for black teenage girls rose to 40 percent. From what?

Mrs. NORWOOD. From 30, 28 percent. I'll find out in a moment.

Representative HAMILTON. While you're looking that up—and you can supply that in a moment—the number of blacks unemployed has risen by 200,000 since April and their unemployment rate has gone from 10.8 to 11.9 percent while the unemployment rate for whites and Hispanics has come down. Now why? Why is the black unemployment rate going up and the white and Hispanic unemployment rate going down?

Mrs. NORWOOD. We've been seeing more blacks entering the labor force recently. Earlier, their labor force increases had been much more moderate than that for Hispanics. Over the last year, for example, more than 500,000 blacks entered the labor force and 400,000 of them got jobs.

For Hispanics, the situation is a bit reversed. They got jobs and fewer of them entered the labor force over the last year. Part of that, of course, is dependent on the geographic location of these workers as well as on their occupational training or lack thereof.

Representative HAMILTON. And what explains this astounding rate of 40 percent for black teenage girls?

Mrs. NORWOOD. That rate rose from 28.4 percent. It's a 1-month change and I would not put too much credence in the actual 40 percent, but it is clear that those rates are very high. And if you look at the overall rate for all black teenagers, men as well as women, that's been over 30 percent for several months, and I think it is a cause for great concern.

Representative **Hamilton**. Now let's talk a little bit about your data at the Bureau. Today, the BLS reported the payroll growth figure for June. How much will that figure be revised by the time you put out the final number in September?

Mrs. **Norwood**. I hope not by very much. And I may say that if we look at past experience we've done extremely well in our estimating process.

I must point out, however, that last month, for the month of May, we reported an increase of 100,000 payroll jobs and that number doubled when we got the final reports in. That's very unusual and I would hope that we don't have a repetition of that.

We did, as you know, report on the benchmark of the representation of the total universe recently and we were within three-tenths of 1 percent of the total, so I think that's pretty good.

Representative **Hamilton**. Now the job growth reported each month in the payroll survey is estimated; is that right?

Mrs. **Norwood**. Yes. All surveys are estimates. The first published numbers from the payroll survey of business establishments are preliminary because there are about 325,000 or 350,000 business establishments reporting each month, and they don't all necessary report in time.

Representative **Hamilton**. New establishments?

Mrs. **Norwood**. Pardon me.

Representative **Hamilton**. New establishments?

Mrs. **Norwood**. No. There are 350,000 existing establishments.

Representative **Hamilton**. OK.

Mrs. **Norwood**. And we try to take account of births and deaths of establishments. Nevertheless, by the time of the first closing—what we call the first closing is the preliminary data that we present to you—we do not have all of the reports in. Between now and I guess a month and a half or so from now we will get more reports and we will publish revised estimates. Finally, once each year we have a benchmark revision.

We have been working very hard on improving the data collection process. We have already improved the response rates for the first closing; we're very pleased at the work that the States have done. And we have some work underway now in our modernization program using new technology: computer-assisted telephone interviewing, for example, and touch-tone data entry and we're even experimenting now with voice recognition by the computer for reports by businesses. These techniques seem to us to hold the potential for raising those first closing rates to as high as 80 or 90 percent.

Representative **Hamilton**. How do you get data from companies that are very, very new?

Mrs. **Norwood**. That's a problem. This survey is based upon the unemployment insurance records and the reports of companies. A new company is in business awhile before it reports its tax records.

And so based upon past experience, we have developed bias adjustment factors that are applied to this survey each month to account for the births of new firms? This process is one of the reasons that we check this survey every year against the total universe. And, as I've said, we have done we believe extremely well in statistical terms.

Representative **Hamilton**. How much of the job growth in any given month comes from your estimate of job growth in new firms?

Mrs. **Norwood**. I can't tell you that exactly here. We could, if you like, try to put something in the record about that.

We believe that there has been a good bit of growth, particularly in smaller firms. And one of the things that we have underway in the Bureau is a project to develop and improve the business establishment list. OMB is planning to designate the BLS list as the list for the entire statistical community to use for sampling. Part of that effort is to try to get better designation of individual units within counties but also to try to pick up new units much more quickly.

Representative **Hamilton**. Are the figures for June on employment and unemployment less reliable than the data for other months?

Mrs. **Norwood**. We have enormous flows into the labor market in June. We seasonally adjust them because we expect them every year. To the extent that this June is somewhat different from previous years, obviously there will be a less perfect adjustment. June and January——

Representative **Hamilton**. Are the difficult months?

Mrs. **Norwood** [continuing]. Are the most difficult months of all.

Mr. Plewes tells me that we had—why don't you tell him, Mr. Plewes?

Mr. **Plewes**. Just to give you an idea of some of the flows: between May and June, on an unadjusted basis, we gained in the labor force 2.5 million new people; 1.7 million of those found jobs, 800,000 of them did not. And those are the kinds of flows that we deal with. It's very large.

In addition to that, there are other kinds of flows that are going on that you probably wouldn't see in the totals. For example, about 2 million workers, mostly women, withdraw from the part-time work force entirely as the summer comes on to stay home during the summer; in the fall, they come back in again.

So we really have some very large flows that we're trying to keep track of between these 2 months and there is some difficulty in seasonally adjusting it based on past practice.

Mrs. **Norwood**. But I do want to say that we don't see anything unusual in this June to suggest that there are any special problems.

Representative **Hamilton**. Let me ask a question about inflation, too. In the last 3 months the CPI has risen 7.1 percent, while the PPI has risen 7.3 percent, both at an annual rate. Can you tell us what has happened to the inflation rate during these recent months? What has been the trend here?

Mrs. **Norwood**. Well it has been going up. But a lot of that has been food and energy. Mr. Armknecht can tell you more about that.

Mr. **Armknecht**. The energy component, primarily energy commodities and fuels which are driven by petroleum based products, has risen at an annual rate of almost 54 percent since the beginning of the year.

Representative **Hamilton**. Energy?

Mr. **Armknecht**. Well, the motor fuels portion—that's petroleum based—has risen at a 54 percent rate since the beginning of the year. That's an annual rate. That seems to be a major driving factor, along with food. Those are the two major components that have contributed to the inflation that we experienced in the first 5 months of the year.

Mrs. **Norwood**. A lot of people look at the CPI and even the PPI and say well what we want to see is a kind of underlying rate of what's going on in the economy so you take out energy and you take out food. And that's useful, certainly, we need to know about that, but people do need to drive their cars to get to work and people do need to eat.

Representative **Hamilton**. I'm not much impressed by economists who take energy and food out of the Consumer Price Index. I understand it is an analytical tool, of course, but it doesn't have much impact, does it, in terms of the——

Mrs. **Norwood**. The people.

Representative **Hamilton** [continuing]. People?

Now, look back on the inflation in the 1970's. What happened to the inflation rate in the 1970's? Did it shoot up very, very rapidly or was there a slow takeoff? How did that go?

I'm looking obviously for comparisons to what's happening now. We've had a steady increase in the inflation rate, it has been a slow increase in recent months, if I recall.

What happened in the seventies, of course, when we eventually ended up with a very high rate of inflation?

Mrs. **Norwood**. We did have a real shock from the embargo during the midseventies and energy continued upward. And then toward the end of the seventies we had rather massive food inflation.

Representative **Hamilton**. Was that a gradual increase, for the most part?

Mrs. **Norwood**. Well the rest of the index, other commodities, had a more gradual increase but, of course, we had the energy shock and then that energy price increase tended to find its way into the manufacturing process and into other prices.

Then we had a food shock, in a sense, toward the end of 1979 and 1980.

Representative **Hamilton**. We had an announcement this week from the budget director that directed government agencies to prepare for reductions of 5 percent in domestic spending programs for fiscal 1991.

What effect would a 5-percent cut have on the BLS programs in 1991?

Mrs. **Norwood**. Well, first, let me say that the directive really is more than 5 percent. There were three budgets to be produced: the middle one is a standstill budget which, for us, would be probably a 5-percent reduction right there because of the mandatory increases for State salaries, for the Census Bureau salaries, for postage, rent, telephone, and so on, over which we have absolutely no control.

Then the third budget that we are to prepare is a 5-percent reduction below that level, so it really comes to about a 10-percent reduction.

And I don't know what effect that will——

Representative HAMILTON. What's the first budget you have to prepare? You said there were three.

Mrs. NORWOOD. Yes, well the first is sort of a normal budget in which you look at where you are and what you need, including the mandatories and determine if there are any special new programs that you think need to be bolstered or developed.

Respresentative HAMILTON. That's what you'd like to get, is that it?

Mrs. NORWOOD. Well that's the normal process, yes. And you either stay with what you have or make some changes within the budget to drop some things and add other things—or to get increases.

As you know, based on the past budgets, we have some programs that we are supposed to develop and expand: for example, the redesign of the Current Population Survey that we're reporting on today is supposed to have an increase next year and for each of the next several years. Programs of that kind are very much affected by this kind of thing, because the only way you could do it is to remove some other program.

Our problem is that in the early eighties we took some rather steep cuts by eliminating whole programs and trying to maintain the quality of the programs that we kept. And I think we did a pretty good job of that. But I don't have any more programs of that kind to eliminate, so——

Respresentative HAMILTON. What is your directive from the budget director? You prepare three budgets, is that the directive?

Mrs. NORWOOD. Yes.

Respresentative HAMILTON. And there is no indication at this point which of those three is the budget.

Mrs. NORWOOD. That's correct.

Respresentative HAMILTON. Now you issued a release last Friday on Productivity, International Comparisons, and it showed that in productivity gains and unit labor costs, U.S. industry did no better than average during 1988 compared to 11 of our major trading partners.

Would you summarize other main findings of that release for us? The central point I'm interested in is whether or not it tells us anything about whether U.S. industries are improving our competitive position against our major trading partners.

Mrs. NORWOOD. Well I think the important thing is that the growth rates in our unit labor costs are continuing to be relatively low. We did have a slight increase in unit labor costs, but we're not seeing any large upward pressure on wages.

Nevertheless, some of the other countries, Japan in particular, and some of the others, had decreasing unit labor costs. That therefore put us at something of a disadvantage except that the currencies of most of the foreign economies appreciated relative to the U.S. dollar in 1988, and changes in the value of the dollar also affects trade competitiveness. Subsequent changes in exchange rates in the first half of 1989 have largely negated that advantage.

We have had, as you know, a very careful restraint by manufacturers on their labor costs over the last several years as our export performance has picked up. As you know we saw over the last 3 months a decline in employment in manufacturing.

Several of the countries of Europe have also had declines in manufacturing employment and many of those declines have been somewhat larger than ours; in fact, we had over 1987 and 1988 a small increase in factory employment in the United States. Only Canada had a larger percentage increase over those 2 years.

Respresentative HAMILTON. Table A in your press release shows that 6 of the 11 countries had equal or faster productivity growth and 5 of them did better with unit labor costs.

Mrs. NORWOOD. That's correct, until you adjust labor costs for exchange rates change.

Respresentative HAMILTON. So what does all this tell us about competitiveness? Are we winning or losing the battle?

Mrs. NORWOOD. Well our manufacturing competitiveness has deteriorated somewhat in the last 6 months or so because of the recent strength of the dollar. Between 1985 and 1988, however, our manufacturing competitiveness improved greatly.

Respresentative HAMILTON. You've also put a release out on high school graduates based on your October 1988 household survey that a record of 59 percent of high school graduates went on to college in 1988. That's up from what in 1987?

Mr. PLEWES. I'm going to have to look that up.

Representative HAMILTON. What's the trend line?

Mr. PLEWES. The trend line is going up very slowly.

Representative HAMILTON. Slowly. More and more high school graduates go to college.

Mr. PLEWES. That's correct.

Representative HAMILTON. And how about the percentage of black high school graduates enrolling in college, is that significantly different, or do you have figures on that?

Mr. PLEWES. I do. [Pause.] I have those, but I don't have them with me.

Representative HAMILTON. All right. Why don't you just supply that for the record?

How about the percentage of young people who drop out of high school before they gradutate, do you have that percentage?

Mrs. NORWOOD. We have that as well but we'd better provide it for the record.

Representative HAMILTON. OK.

Well, what I'd like to get is the trend line on the high school graduates over the past decade, and then get the percentage of black high school graduates who enrolled in college during that period of time, and I'd like to get the dropout rates, too, if you have that.

Mrs. NORWOOD. Sure. We can get them for you.

Representative HAMILTON. And why don't you add the percentage of all college-age youths who are enrolled in college, if you have that.

Mrs. NORWOOD. Yes.

[The following information was subsequently supplied for the record:]

of Labor

Commissioner for
Bureau of Labor Statistics
Washington, D.C. 20212

JUL 18 1989

Honorable Lee Hamilton
House of Representatives
Washington, D.C. 20515

Dear Congressman Hamilton:

In response to the questions you raised at the July 7 Joint Economic Committee hearing, I am sending you several tables on trends among recent high school graduates and dropouts.

Table 1 shows the trend in college enrollment among graduating high school seniors. As you can see, in 1988 a record 59 percent of June high school graduates were enrolled in college by October. The table also shows that the increase in this rate during the 1980s was limited largely to whites; the proportion of blacks going on to college has shown no clear trend. Table 2 shows the number of youth who dropped out of high school in each of several years. The size of this group has been declining, largely reflecting the shrinking youth population. Selected labor force characteristics of recent high school graduates (both enrolled and not enrolled in college) and of dropouts are shown on table 3. As expected, the graduates not in college fare better in the labor market than do the dropouts. However, the transition from school to work is not without difficulties even for high school graduates. This is especially the case for black graduates entering the labor force; one in four were unemployed in the fall of 1988.

I hope the enclosed tables fully address your questions. If I may be of further assistance, please do not hesitate to contact me.

Sincerely yours,

Janet

JANET L. NORWOOD
Commissioner

Enclosures

Table 1. Percent of recent high school graduates 16 to 24 years old enrolled in college by year of graduation, sex, and race, October of selected years

Year	Total recent graduates (in thousands)	Percent enrolled in college				
		Total	Men	Women	White	Black[1]
1975	3,197	51	53	49	51	46
1980	3,111	49	47	52	50	43
1985	2,666	58	59	57	59	42
1986	2,786	54	56	52	56	37
1987	2,647	57	58	55	57	52
1988	2,673	59	57	61	61	45

[1] Data prior to 1977 refer to black and other workers.

SOURCE: U.S. Department of Labor
Bureau of Labor Statistics
July 1989

Table 2. Number of recent high school dropouts 16 to 24 years old by sex and race, October of selected years

(In thousands)

Year	Number of recent dropouts				
	Total	Men	Women	White	Black[1]
1975	737	364	373	583	153
1980	759	428	331	588	151
1985	612	321	291	458	132
1986	562	300	262	449	90
1987	502	274	228	373	115
1988	552	307	245	436	107

[1] Data prior to 1977 refer to black and other workers.

NOTE: Data refer to persons who dropped out of high school during the 12 months ending in the reference month.

SOURCE: U.S. Department of Labor
Bureau of Labor Statistics
July 1989

Table 3. Labor force participation and unemployment rates of recent high school graduates and dropouts 16 to 24 years old by sex and race, October of selected years

Year	Recent high school graduates				Recent high school dropouts	
	Enrolled in college		Not enrolled in college			
	Labor force participation rate	Unemployment rate	Labor force participation rate	Unemployment rate	Labor force participation rate	Unemployment rate
Total						
1975	39.6	11.7	81.2	19.9	62.6	34.0
1980	43.3	12.5	85.1	19.0	63.8	31.5
1985	44.4	13.2	82.3	24.6	67.5	35.6
1986	47.8	13.1	81.4	19.9	63.9	27.9
1987	46.5	12.3	83.8	17.8	66.4	37.8
1988	47.4	11.6	84.7	15.1	59.2	26.7
Men						
1975	39.8	10.3	91.5	19.1	82.5	34.3
1980	44.1	15.6	89.7	19.1	72.8	30.5
1985	43.4	14.4	86.1	24.5	81.3	37.5
1986	51.2	10.8	86.2	19.4	72.0	22.2
1987	45.4	9.0	89.0	13.7	73.7	38.1
1988	47.6	9.5	88.5	16.2	74.4	28.5
Women						
1975	39.4	13.0	72.6	20.8	43.4	33.3
1980	42.6	9.7	80.1	18.8	52.3	33.5
1985	45.4	12.1	78.8	24.7	52.2	32.2
1986	44.5	15.8	77.4	20.3	54.6	36.4
1987	47.5	15.4	79.2	21.9	57.6	37.3
1988	47.3	13.6	80.6	13.7	40.1	22.4
White						
1975	41.4	11.0	82.5	17.1	63.7	27.8
1980	45.3	12.4	87.3	14.8	67.7	26.9
1985	46.5	11.0	83.9	18.1	72.1	35.2
1986	50.4	12.6	84.8	16.5	64.4	26.3
1987	46.8	9.7	85.6	15.0	68.9	33.0
1988	50.3	10.5	87.7	12.9	64.8	24.7
Black[1]						
1975	24.6	(2)	70.9	42.7	58.2	61.9
1980	26.3	(2)	71.0	51.7	50.4	56.6
1985	31.2	(2)	76.6	55.1	52.3	(2)
1986	29.1	(2)	68.2	38.3	55.6	(2)
1987	45.0	29.4	73.4	36.1	60.1	(2)
1988	28.5	(2)	73.9	24.5	39.4	(2)

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[1] Data prior to 1977 refer to black and other workers.

[2] Rate not shown where base is less than 75,000.

SOURCE: U.S. Department of Labor
Bureau of Labor Statistics
July 1989

Representative **Hamilton**. We've seen reports about the leading indicators and what they tell us about the direction of the economy.

What, in your experience, are the best leading indictors of what the direction of the economy will be? Do any of the indicators stand out to you?

Mrs. **Norwood**. Well, of course, we have one that we produce, which is the factory workweek, but as manufacturing becomes a much smaller proportion of the economy, I believe that a lot of that influence is beginning to change.

Representative **Hamilton**. So in the recent past then you have looked at the factory hours indicator as a very important one, is that right?

Mrs. **Norwood**. Yes, an extremely important one. More recently, I think orders and vendor performance and business formations are generally looked at.

My feeling is, however, that while it's useful to look at these indicators and they do predict on average changes in recessions and recoveries, first of all, they're very often revised, and second, they are very often off the mark.

I don't think we really have a very active manner of predicting some of the things and that we really need to look at the data themselves. For example, some people will look at capacity utilization in trying to look at labor market tightness, but capacity utilization today, I think, is very different from what it was before. We've had a lot of plants closing down and what we've done is closed out the most inefficient of those factories. So the capacity that we now have is different from the capacity that we had 10 years ago.

I see changes in the economy, the structural changes of industry and of occupation that make me wonder how much we can rely on the past to predict the future.

Representative **Hamilton**. Now, average weekly hours in manufacturing have been declining since April.

Mrs. **Norwood**. Yes. They're still very high though.

Representative **Hamilton**. To 40.9 hours.

Mrs. **Norwood**. Yes, that's still very high.

Representative **Hamilton**. That's still high.

And then in the total private economy average weekly hours have declined in that period from 34.9 to 34.6.

Mrs. **Norwood**. That's correct.

Representative **Hamilton**. Is the decline in hours concentrated in manufacturing?

Mrs. **Norwood**. I think we measure it better in manufacturing. The data are more reliable in manufacturing where we measure earnings only for production workers. It's harder to get good hours data for professional workers in the service-producing economy.

Representative **Hamilton**. Thank you very much for your appearance this morning and your colleagues as well.

Mrs. **Norwood**. Thank you very much.

Representative **Hamilton**. The committee stands adjourned.

[Whereupon, at 10:13 a.m., the committee adjourned, subject to the call of the Chair.]

EMPLOYMENT-UNEMPLOYMENT

FRIDAY, AUGUST 4, 1989

Congress of the United States,
Joint Economic Committee,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m., in room 2359, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the committee) presiding.

Present: Representatives Hamilton, Solarz, Snowe, and Upton; and Senator Sarbanes.

Also present: Joseph J. Minarik, executive director; William Buechner, Jim Klumpner, and Chris Frenze, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative **Hamilton**. The Joint Economic Committee will come to order.

On behalf of the members of the Joint Economic Committee, I want to welcome Commissioner Norwood this morning for her monthly analysis of the employment and unemployment situation, this time for July.

According to the Employment Situation press release issued this morning, there was virtually no change in the overall employment or unemployment situation in July. The civilian unemployment rate was 5.2 percent, down slightly from June. Both employment and unemployment fell by very small amounts. Among labor market groups, the unemployment rates for both teenagers and blacks fell by about 1 percentage point, which was offset by a 1 percentage point rise in the unemployment rate for Hispanics.

Growth in payroll employment slowed in July to 170,000, compared to a monthly average of 250,000 jobs during the past year. The one odd figure in this morning's release was an unusually large increase in average weekly hours, which suggests some strength in the economy that doesn't appear in other July data.

The committee will now hear from Commissioner Norwood for her testimony on the July employment and unemployment data.

Madam Commissioner, please proceed.

STATEMENT OF HON. JANET L. NORWOOD, COMMISSIONER, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, ACCOMPANIED BY KENNETH V. DALTON, ASSOCIATE COMMISSIONER, OFFICE OF PRICES AND LIVING CONDITIONS; AND JOHN E. BREGGER, ASSISTANT COMMISSIONER, OFFICE OF CURRENT EMPLOYMENT ANALYSIS

Mrs. **Norwood**. Thank you very much, Mr. Chairman. I have with me Kenneth Dalton, our price expert, and Jack Bregger, our employment and unemployment expert. We are very pleased to be here.

Employment rose moderately, and unemployment changed very little in July. Both the civilian worker unemployment rate and the total rate including the resident Armed Forces were 5.2 percent.

Payroll employment in the nonfarm private sector rose by 195,000 from June to July, in line with the slower job growth of recent months. The services industry, which has accounted for the lion's share of employment growth during the current economic expansion, rose by 75,000, following a very large increase in June. Taking a longer view, employment growth in services has moderated this year, with monthly gains in the first 7 months, averaging about 15,000 less than for the same period last year.

Moderating job growth is also apparent in other industries in the service-producing sector of the economy. Recent employment gains in retail trade are below last year's pace despite an increase of 50,000 in July. In wholesale trade, average monthly job gains since March have been about half those of last year. Employment in the transportation industry, however, rose by 25,000 in July, continuing last year's growth pattern.

In the Nation's factories, overall employment held steady in July after 3 months of small declines, as about the same number of industries gained jobs as lost them.

Among the durable goods manufacturers, the recent downward trend in employment continued, with job losses totaling 55,000 since March. Auto manufacturing experienced its second straight monthly decline, bringing the total drop in that industry to 30,000 since May. Job losses in the electrical equipment industry, which have occurred steadily since November, accelerated over the last 3 months. The only durable goods industries showing continued growth are machinery and instruments, and even there the increases are below the pace of last year.

Job gains occurred in several nondurable industries, but the increases were generally small. The one exception was in food processing, where fruit and vegetable canning activities expanded.

Elsewhere in the goods-producing industries, construction employment rose by 35,000, following 2 months with little change. Mining employment fell for the second month in a row, reflecting strike activity in the Nation's coal mines.

Turning to the data from our survey of households, the unemployment rates for adult men and women showed little change over the month. Over the past several months, however, the jobless rate for adult women has edged up steadily and is now seven-tenths of a percentage point higher than the rate for adult men. The unemployment rate for Hispanics rose in July; the rate for blacks declined, following a rise of similar magnitude in June. The decline occurred primarily among black teenagers. Of course, as those who follow these data realize, the unemployment rates for small population groups can swing widely from month to month. Over the last 2 months, for example, the rate for black teenage women jumped up by 12 percentage points in June and then fell 7 points in July.

With the release of the data for July, we now have the final bit of information on the summertime increases in the labor force, which are large and vary each year on a month-to-month basis. Between April and July of this year, the actual increase in employment of 16- to 24-year-old workers—before seasonal adjustment—was about 3.1 million, about in line with the summertime increases of recent years. These large summer gains have continued despite a sizable drop in the youth population. As the economy has improved, a larger proportion of these young people have been able to find summer jobs.

In summary, employment grew moderately in July, with gains in the services, retail trade, and construction industries. However, employment in durable manufacturing industries remained quite weak. Unemployment has shown little movement over the past few months.

The remainder of my statement, Mr. Chairman, comments about the use of new data in calculating our productivity measures, using measures of hours worked rather than hours paid. We'd be glad to try to answer any questions you have now.

[The prepared statement of Mrs. Norwood, together with the Employment Situation press release, follows:]

FOR RELEASE: 9:30 A.M., E.D.T.
FRIDAY, AUGUST 4, 1989

Advance copies of this statement are made available to the press with the explicit understanding that, prior to 8:30 a.m. Eastern time: (1) Wire services will not move over their wires copy based on information in this statement, (2) electronic media will not feed such information to member stations, and (3) representatives of news organizations will not contact anyone outside the Bureau of Labor Statistics to ask questions or solicit comments about information in this statement.

Prepared
Statement of

Dr. Janet L. Norwood
Commissioner
Bureau of Labor Statistics

before the

Joint Economic Committee
UNITED STATES CONGRESS

August 4, 1989

Mr. Chairman and Members of the Committee:

Once again, I would like to thank you for the opportunity to discuss developments in employment and unemployment as reported in this morning's Employment Situation news release.

Employment rose moderately, and unemployment changed very little in July. Both the civilian worker unemployment rate and the total rate including the resident Armed Forces were 5.2 percent.

Payroll employment in the nonfarm private sector rose by 195,000 from June to July, in line with the slower job growth of recent months. The services industry, which has accounted for the lion's share of employment growth during the current economic expansion, rose by 75,000, following a very large increase in June. Taking a longer view, employment growth in services has moderated this year, with monthly gains in the first 7 months averaging about 15,000 less than for the same period last year.

Moderating job growth is also apparent in other industries in the service-producing sector of the economy. Recent employment gains in retail trade are below last year's pace despite an increase of 50,000 in July. In wholesale trade, average monthly job gains since March have been about half those of last year. Employment in the transportation industry, however, rose by 25,000 in July, continuing last year's growth pattern.

In the nation's factories, overall employment held steady in July after 3 months of small declines, as about the same number of industries gained jobs as lost them.

Among the durable goods manufacturers, the recent downward trend in employment continued, with job losses totaling 55,000 since March. Auto manufacturing experienced its second straight monthly decline, bringing the total drop in that industry to 30,000 since May. Job losses in the electrical equipment industry, which have occurred steadily since November, accelerated over the last 3 months. The only durable goods industries showing continued growth are machinery and instruments, and even there the increases are below the pace of last year.

Job gains occurred in several nondurable industries, but the increases were generally small. The one exception was in food processing, where fruit and vegetable canning activities expanded.

Elsewhere in the goods-producing industries, construction employment rose by 35,000, following 2 months with little change. Mining employment fell for the second month in a row, reflecting strike activity in the nation's coal mines.

Turning to the data from our survey of households, the unemployment rates for adult men and women showed little change over the month. Over the past several months, however, the jobless rate for adult women has edged up steadily and is now seven-tenths of a percentage point higher than the rate for adult men. The unemployment rate for Hispanics rose in July; the rate for blacks declined, following a rise of similar magnitude in June. The decline occurred primarily among black teenagers. Of course, as those who follow these data realize, the unemployment rates for small population groups can swing widely from month to month. Over the last 2 months, for example, the rate for black teenage women jumped up by 12 percentage points in June and then fell 7 points in July.

With the release of the data for July, we now have the final bit of information on the summertime increases in the labor force, which are large and vary each year on a month-to-month basis. Between April and July of this year, the actual increase in employment of 16-to-24 year-old workers -- before seasonal adjustment -- was about 3.1 million, about in line with the summertime increases of recent years. These large summer gains have continued despite a sizeable drop in the youth population. As the economy has improved, a larger proportion of these young people have been able to find summer jobs.

In summary, employment grew moderately in July, with gains in the services, retail trade, and construction industries. However, employment in durable manufacturing industries remained weak. Unemployment has shown little movement over the past few months.

New Developments in Productivity Measurement

It has been my custom to inform this Committee when improvements are made in our measures. With our August 3 productivity and costs news release, we introduced labor input measures based on hours at work, rather than hours paid. Similarly, our productivity measure is now output per hour at work instead of output per hour paid.

Hours at work is a more appropriate measure of labor input for productivity computations than hours paid, which include vacations, holidays, and sick leave. While the new labor input measures cause little change in long-term productivity trends, differences of between three-tenths and seven-tenths of a percentage point in year-to-year changes are frequent.

My colleagues and I will now be glad to answer any questions you may have.

Unemployment rates of all civilian workers by alternative seasonal adjustment methods

Month and year	Unadjusted rate	X-11 ARIMA method							X-11 method (official method before 1980)	Range (cols. 2-9)
		Official procedure	Concurrent (as first computed)	Concurrent (revised)	Stable	Total	Residual	12-month extrapolation		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1988										
July.........	5.5	5.4	5.4	5.4	5.4	5.5	5.5	5.4	5.4	.1
August.......	5.4	5.6	5.6	5.5	5.5	5.6	5.6	5.6	5.6	.1
September....	5.2	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	-
October......	5.0	5.3	5.3	5.3	5.3	5.3	5.4	5.3	5.3	.1
November.....	5.2	5.4	5.4	5.4	5.4	5.3	5.4	5.4	5.4	.1
December.....	5.0	5.3	5.3	5.4	5.3	5.3	5.4	5.3	5.4	.1
1989										
January......	6.0	5.4	5.4	5.4	5.5	5.4	5.3	5.4	5.5	.2
February.....	5.6	5.1	5.2	5.2	5.2	5.2	5.0	5.1	5.2	.2
March........	5.2	5.0	5.0	5.0	5.0	5.0	4.8	5.0	5.0	.2
April........	5.1	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	-
May..........	5.0	5.2	5.2	5.2	5.2	5.1	5.3	5.2	5.1	.2
June.........	5.5	5.3	5.3	5.3	5.2	5.4	5.4	5.3	5.3	.2
July.........	5.3	5.2	5.2	5.2	5.2	5.3	5.3	5.3	5.3	.1

SOURCE: U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
August 1989

(1) *Unadjusted rate*. Unemployment rate for all civilian workers, not seasonally adjusted.

(2) *Official procedure (X-11 ARIMA method)*. The published seasonally adjusted rate for all civilian workers. Each of the 3 major civilian labor force components—agricultural employment, nonagricultural employment and unemployment—for 4 age-sex groups—males and females, ages 16-19 and 20 years and over—are seasonally adjusted independently using data from January 1974 forward. The data series for each of these 12 components are extended by a year at each end of the original series using ARIMA (Auto-Regressive, Integrated, Moving Average) models chosen specifically for each series. Each extended series is then seasonally adjusted with the X-11 portion of the X-11 ARIMA program. The 4 teenage unemployment and nonagricultural employment components are adjusted with the additive adjustment model, while the other components are adjusted with the multiplicative model. The unemployment rate is computed by summing the 4 seasonally adjusted unemployment components and calculating that total as a percent of the civilian labor force total derived by summing all 12 seasonally adjusted components. All the seasonally adjusted series are revised at the end of each year. Extrapolated factors for January-June are computed at the beginning of each year; extrapolated factors for July-December are computed in the middle of the year after the June data become available. Each set of 6-month factors are published in advance, in the January and July issues, respectively, of *Employment and Earnings*.

(3) *Concurrent (as first computed, X-11 ARIMA method)*. The official procedure for computation of the rate for all civilian workers using the 12 components is followed except that extrapolated factors are not used at all. Each component is seasonally adjusted with the X-11 ARIMA program each month as the most recent data become available. Rates for each month of the current year are shown as first computed; they are revised only once each year, at the end of the year when data for the full year become available. For example, the rate for January 1984 would be based, during 1984, on the adjustment of data from the period January 1974 through January 1984.

(4) *Concurrent (revised, X-11 ARIMA method)*. The procedure used is identical to (3) above, and the rate for the current month (the last month displayed) will always be the same in the two columns. However, all previous months are subject to revision each month based on the seasonal adjustment of all the components with data through the current month.

(5) *Stable (X-11 ARIMA method)*. Each of the 12 civilian labor force components is extended using ARIMA models as in the official procedure and then run through the X-11 part of the program using the stable option. This option assumes that seasonal patterns are basically constant from year-to-year and computes final seasonal factors as unweighted averages of all the seasonal-irregular components for each month across the entire span of the period adjusted. As in the official procedure, factors are extrapolated in 6-month intervals and the series are revised at the end of each year. The procedure for computation of the rate from the seasonally adjusted components is also identical to the official procedure.

(6) *Total (X-11 ARIMA method)*. This is one alternative aggregation procedure, in which total unemployment and civilian labor force levels are extended with ARIMA models and directly adjusted with multiplicative adjustment models in the X-11 part of the program. The rate is computed by taking seasonally adjusted total unemployment as a percent of seasonally adjusted total civilian labor force. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(7) *Residual (X-11 ARIMA method)*. This is another alternative aggregation method, in which total civilian employment and civilian labor force levels are extended using ARIMA models and then directly adjusted with multiplicative adjustment models. The seasonally adjusted unemployment level is derived by subtracting seasonally adjusted employment from seasonally adjusted labor force. The rate is then computed by taking the derived unemployment level as a percent of the labor force level. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(8) *12-month extrapolation (X-11 ARIMA method)*. This approach is the same as the official procedure except that the factors are extrapolated in 12-month intervals. The factors for January-December of the current year are computed at the beginning of the year based on data through the preceding year. The values for January through June of the current year are the same as the official values since they reflect the same factors.

(9) *X-11 method (official method before 1980)*. The method for computation of the official procedure is used except that the series are not extended with ARIMA models and the factors are projected in 12-month intervals. The standard X-11 program is used to perform the seasonal adjustment.

Methods of Adjustment: The X-11 ARIMA method was developed at Statistics Canada by the Seasonal Adjustment and Times Series Staff under the direction of Estela Bee Dagum. The method is described in *The X-11 ARIMA Seasonal Adjustment Method*, by Estela Bee Dagum, Statistics Canada Catalogue No. 12-564E, February 1980.

The standard X-11 method is described in *X-11 Variant of the Census Method II Seasonal Adjustment Program*, by Julius Shiskin, Allan Young and John Musgrave (Technical Paper No. 15, Bureau of the Census, 1967).

News United States Department of Labor

Bureau of Labor Statistics Washington, D.C. 20212

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RELEASE IS EMBARGOED UNTIL
8:30 A.M. (EDT), FRIDAY,
AUGUST 4, 1989

THE EMPLOYMENT SITUATION: JULY 1989

Payroll employment continued to increase in July and unemployment was little changed, the Bureau of Labor Statistics of the U. S. Department of Labor reported today. Both the overall jobless rate and that for civilian workers were 5.2 percent.

Nonagricultural payroll employment, as measured by the survey of business establishments, rose by 170,000. Jobs in the private sector (excluding government) increased by 195,000. Total civilian employment, as measured by the survey of households, showed little change over the month.

Unemployment (Household Survey Data)

The number of unemployed persons, 6.5 million, and the civilian worker unemployment rate, 5.2 percent, were virtually unchanged in July, after seasonal adjustment. In fact, the civilian worker rate has been either 5.2 or 5.3 percent for 4 consecutive months. Jobless rates for adult men (4.3 percent), adult women (5.0 percent), and whites (4.6 percent) held steady from the previous month. There was a small decline among teenagers (to 14.7 percent). The rate for Hispanic workers (9.0 percent) rose, while that for black workers (10.9 percent) showed a decrease, largely because the quite volatile rate for black teenagers (27.4 percent) fell markedly. (See tables A-2 and A-3.)

The number of persons working part time for economic reasons--sometimes referred to as the partially unemployed--was at a seasonally adjusted level of 4.8 million in July. This series has been trending down over the past year. (See table A-4.)

Civilian Employment and the Labor Force (Household Survey Data)

Total civilian employment was essentially unchanged in July at a seasonally adjusted level of 117.5 million. The proportion of the working-age population that is employed (the employment-population ratio) was 63.0 percent, about where it has been for the past 7 months. Civilian employment has grown by 2.4 million over the past year. (See table A-2.)

Table A. Major indicators of labor market activity, seasonally adjusted

Category	Quarterly averages		Monthly data			June-July change
	1989		1989			
	I	II	May	June	July	
HOUSEHOLD DATA	Thousands of persons					
Labor force 1/........	124,979	125,464	125,283	125,768	125,622	-146
Total employment 1/.	118,588	118,964	118,888	119,207	119,125	- 82
Civilian labor force..	123,291	123,790	123,610	124,102	123,956	-146
Civilian employment.	116,900	117,289	117,215	117,541	117,459	- 82
Unemployment........	6,391	6,501	6,395	6,561	6,497	- 64
Not in labor force....	62,482	62,388	62,571	62,228	62,527	299
Discouraged workers.	855	869	N.A.	N.A.	N.A.	N.A.
	Percent of labor force					
Unemployment rates:						
All workers 1/......	5.1	5.2	5.1	5.2	5.2	0
All civilian workers	5.2	5.3	5.2	5.3	5.2	-0.1
Adult men.........	4.5	4.4	4.3	4.3	4.3	0
Adult women.......	4.6	4.8	4.8	4.9	5.0	.1
Teenagers.........	15.0	15.1	15.2	15.6	14.7	- .9
White.............	4.4	4.5	4.4	4.5	4.6	.1
Black.............	11.6	11.2	11.0	11.9	10.9	-1.0
Hispanic origin...	7.2	8.1	7.9	8.1	9.0	.9
ESTABLISHMENT DATA	Thousands of jobs					
Nonfarm employment....	107,680	p108,324	108,310	p108,560	p108,729	p169
Goods-producing.....	25,634	p25,665	25,672	p25,651	p25,680	p29
Service-producing...	82,047	p82,659	82,638	p82,909	p83,049	p140
	Hours of work					
Average weekly hours:						
Total private.......	34.7	p34.7	34.6	p34.6	p34.9	p0.3
Manufacturing.......	41.1	p41.1	41.0	p41.0	p41.0	p 0
Overtime..........	3.9	p3.8	3.8	p3.8	p3.9	p .1

1/ Includes the resident Armed Forces. p=preliminary.
N.A.=not available.

The civilian labor force, at 124.0 million, and the labor force participation rate, 66.5 percent, were also about unchanged from the previous month. Over the past year, the civilian labor force has risen by 2.4 million, as the number of adult women and men in the labor force expanded by 1.6 million and 1.0 million, respectively, while the number of teenagers--a declining population group--fell by 270,000. (See table A-2.)

Industry Payroll Employment (Establishment Survey Data)

Total nonagricultural payroll employment rose by 170,000 in July to a level of 108.7 million, seasonally adjusted. Private sector employment rose by 195,000. Over the past year, payroll jobs have increased by 2.9 million. (See table B-1.)

In the goods-producing sector, job growth was confined to the construction industry, where employment rose by about 35,000 in July, after being about unchanged during the prior 2 months. Mining employment was down for the second month in a row, due to labor-management disputes.

In manufacturing, employment held steady in July, following 3 consecutive months of decline. Increases in nondurable goods, particularly in food processing, were offset by decreases in durable goods industries. The durable goods sector has lost 55,000 jobs over the past 4 months, thus reversing much of the job growth that occurred in late 1988 and early 1989. Employment in the auto industry dropped sharply for the second straight month, losing over 10,000 jobs in July, as companies continued to slow production because of large inventories and slow sales. Employment in the electrical equipment industry continued its downward trend. The machinery industry, however, showed a small increase.

In the service-producing sector, jobs in the services industry grew by a modest 75,000, following a gain of 210,000 in the prior month. The health services component rose by 30,000, while business services was about unchanged. Retail trade rose by 50,000 over the month, with the largest increases occurring in food stores and eating and drinking places. The transportation industry continued to exhibit strength, with an addition of 25,000 jobs. Employment in finance, insurance, and real estate rose by 10,000 in July. Little employment growth occurred in wholesale trade. Recent employment growth in this industry has been at a much slower pace than earlier in the year.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonagricultural payrolls increased 0.3 hour to 34.9 hours, seasonally adjusted. The manufacturing workweek held at 41.0 hours, while factory overtime, at 3.9 hours, was up 0.1 hour. (See table B-2.)

Mainly reflecting the increase in the workweek, the index of aggregate weekly hours of production or nonsupervisory workers on private nonagricultural payrolls increased by 1.1 percent to 129.4 (1977=100), after seasonal adjustment. The index for manufacturing rose slightly over the month to 96.5. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Average hourly earnings of private production or nonsupervisory workers increased 0.8 percent in July, seasonally adjusted, while average weekly earnings climbed by 1.7 percent. The large increase in hourly earnings followed 2 months of very small changes. Prior to seasonal adjustment, average hourly earnings increased by 5 cents to $9.63 and average weekly earnings jumped $4.63 to $338.01. Over the year, both average hourly earnings and average weekly earnings increased by 4.2 percent. (See tables B-3 and B-4.)

The Employment Situation for August 1989 will be releasd on Friday, September 1, at 8:30 A.M. (EDT).

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics Survey (establishment survey). The household survey provides the information on the labor force, total employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 55,800 households that is conducted by the Bureau of the Census with most of the findings analyzed and published by the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonagricultural payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. The sample includes over 300,000 establishments employing over 38 million people.

For both surveys, the data for a given month are actually collected for and relate to a particular week. In the household survey, unless otherwise indicated, it is the calendar week that contains the 12th day of the month, which is called the survey week. In the establishment survey, the reference week is the pay period including the 12th, which may or may not correspond directly to the calendar week.

The data in this release are affected by a number of technical factors, including definitions, survey differences, seasonal adjustments, and the inevitable variance in results between a survey of a sample and a census of the entire population. Each of these factors is explained below.

Coverage, definitions, and differences between surveys

The sample households in the household survey are selected so as to reflect the entire civilian noninstitutional population 16 years of age and older. Each person in a household is classified as employed, unemployed, or not in the labor force. Those who hold more than one job are classified according to the job at which they worked the most hours.

People are classified as *employed* if they did any work at all as paid civilians; worked in their own business or profession or on their own farm; or worked 15 hours or more in an enterprise operated by a member of their family, whether they were paid or not. People are also counted as employed if they were on unpaid leave because of illness, bad weather, disputes between labor and management, or personal reasons. Members of the Armed Forces stationed in the United States are also included in the employed total.

People are classified as *unemployed*, regardless of their eligibility for unemployment benefits or public assistance, if they meet all of the following criteria: They had no employment during the survey week; they were available for work at that time; and they made specific efforts to find employment sometime during the prior 4 weeks. Persons laid off from their former jobs and awaiting recall and those expecting to report to a job within 30 days need not be looking for work to be counted as unemployed.

The *labor force* equals the sum of the number employed and the number unemployed. The *unemployment rate* is the percentage of unemployed people in the labor force (civilian plus the resident Armed Forces). Table A-5 presents a special grouping of seven measures of unemployment based on varying definitions of unemployment and the labor force. The definitions are provided in the table. The most restrictive definition yields U-1 and the most comprehensive yields U-7. The overall unemployment rate is U-5a, while U-5b represents the same measure with a civilian labor force base.

Unlike the household survey, the establishment survey only counts wage and salary employees whose names appear on the payroll records of nonagricultural firms. As a result, there are many differences between the two surveys, among which are the following:

— The household survey, although based on a smaller sample, reflects a larger segment of the population; the establishment survey excludes agriculture, the self-employed, unpaid family workers, private household workers, and members of the resident Armed Forces;

— The household survey includes people on unpaid leave among the employed; the establishment survey does not;

— The household survey is limited to those 16 years of age and older; the establishment survey is not limited by age;

— The household survey has no duplication of individuals, because each individual is counted only once; in the establishment survey, employees working at more than one job or otherwise appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from the BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the Nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. For example, the labor force increases by a large number each June, when schools close and many young people enter the job market. The effect of such seasonal variation can be very large; over the course of a year, for example, seasonality may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. To return to the school's-out example, the large number of people entering the labor force each June is likely to obscure any other changes that have taken place since May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

Measures of labor force, employment, and unemployment contain components such as age and sex. Statistics for all employees, production workers, average weekly hours, and average hourly earnings include components based on the employer's industry. All these statistics can be seasonally adjusted either by adjusting the total or by adjusting each of the components and combining them. The second procedure usually yields more accurate information and is therefore followed by BLS. For example, the seasonally adjusted figure for the labor force is the sum of eight seasonally adjusted civilian employment components, plus the resident Armed Forces total (not adjusted for seasonality), and four seasonally adjusted unemployment components; the total for unemployment is the sum of the four unemployment components; and the overall unemployment rate is derived by dividing the resulting estimate of total unemployment by the estimate of the labor force.

The numerical factors used to make the seasonal adjustments are recalculated regularly. For the household survey, the factors are calculated for the January-June period and again for the July-December period. For the establishment survey, updated factors for seasonal adjustment are calculated for 6 months, along with the introduction of new benchmarks, which are discussed at the end of the next section, and again with the release of data for October. In both surveys, revisions to data published over the previous 5 years are made once a year.

Sampling variability

Statistics based on the household and establishment surveys are subject to sampling error, that is, the estimate of the number of people employed and the other estimates drawn from these surveys probably differ from the figures that would be obtained from a complete census, even if the same questionnaires and procedures were used. In the household survey, the amount of the differences can be expressed in terms of standard errors. The numerical value of a standard error depends upon the size of the sample, the results of the survey, and other factors. However, the numerical value is always such that the chances are approximately 68 out of 100 that an estimate based on the sample will differ by no more than the standard error from the results of a complete census. The chances are approximately 90 out of 100 that an estimate based on the sample will differ by no more than 1.6 times the standard error from the results of a complete census. At approximately the 90-percent level of confidence—the confidence limits used by BLS in its analyses—the error for the monthly change in total employment is on the order of plus or minus 358,000; for total unemployment it is 224,000, and, for the overall unemployment rate, it is 0.19 percentage point. These figures do not mean that the sample results are off by these magnitudes but, rather, that the chances are approximately 90 out of 100 that the "true" level or rate would not be expected to differ from the estimates by more than these amounts.

Sampling errors for monthly surveys are reduced when the data are cumulated for several months, such as quarterly or annually. Also, as a general rule, the smaller the estimate, the larger the sampling error. Therefore, relatively speaking, the estimate of the size of the labor force is subject to less error than is the estimate of the number unemployed. And, among the unemployed, the sampling error for the jobless rate of adult men, for example, is much smaller than is the error for the jobless rate of teenagers. Specifically, the error on monthly change in the jobless rate for men is .25 percentage point; for teenagers, it is 1.29 percentage points.

In the establishment survey, estimates for the 2 most current months are based on incomplete returns; for this reason, these estimates are labeled preliminary in the tables. When all the returns in the sample have been received, the estimates are revised. In other words, data for the month of September are published in preliminary form in October and November and in final form in December. To remove errors that build up over time, a comprehensive count of the employed is conducted each year. The results of this survey are used to establish new benchmarks—comprehensive counts of employment—against which month-to-month changes can be measured. The new benchmarks also incorporate changes in the classification of industries and allow for the formation of new establishments.

Additional statistics and other information

In order to provide a broad view of the Nation's employment situation, BLS regularly publishes a wide variety of data in this news release. More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $8.50 per issue or $25.00 per year from the U.S. Government Printing Office, Washington, D.C., 20204. A check or money order made out to the Superintendent of Documents must accompany all orders.

Employment and Earnings also provides approximations of the standard errors for the household survey data published in this release. For unemployment and other labor force categories, the standard errors appear in tables B through J of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables M, O, P, and Q of that publication.

Table A-1. Employment status of the population, including Armed Forces in the United States, by sex

(Numbers in thousands)

Employment status and sex	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
TOTAL									
Noninstitutional population[2]	186,402	187,995	188,149	186,402	187,581	187,706	187,854	187,995	188,149
Labor force[2]	125,561	127,235	127,904	123,331	124,948	125,343	125,283	125,768	125,622
Participation rate[3]	67.4	67.7	68.0	66.2	66.6	66.8	66.7	66.9	66.8
Total employed[2]	118,739	120,385	121,168	116,707	118,820	118,797	118,888	119,207	119,125
Employment-population ratio[4]	63.7	64.0	64.4	62.6	63.3	63.3	63.3	63.4	63.3
Resident Armed Forces	1,673	1,666	1,666	1,673	1,684	1,684	1,673	1,666	1,666
Civilian employed	117,066	118,719	119,502	115,034	117,136	117,113	117,215	117,541	117,459
Agriculture	3,541	3,494	3,713	3,060	3,206	3,104	3,112	3,096	3,219
Nonagricultural industries	113,524	115,226	115,789	111,974	113,930	114,009	114,102	114,445	114,240
Unemployed	6,823	6,850	6,736	6,624	6,128	6,546	6,395	6,561	6,497
Unemployment rate[5]	5.4	5.4	5.3	5.4	4.9	5.2	5.1	5.2	5.2
Not in labor force	60,841	60,760	60,245	63,071	62,633	62,365	62,571	62,228	62,527
Men, 16 years and over									
Noninstitutional population[2]	89,445	90,237	90,315	89,445	90,032	90,094	90,167	90,237	90,315
Labor force[2]	70,205	70,714	71,072	68,461	69,190	69,360	69,114	69,507	69,245
Participation rate[3]	78.5	78.4	78.7	76.5	76.9	77.0	76.7	77.0	76.7
Total employed[2]	66,676	67,230	67,764	64,941	65,920	65,767	65,713	66,110	65,961
Employment-population ratio[4]	74.5	74.5	75.0	72.6	73.2	73.0	72.9	73.3	73.0
Resident Armed Forces	1,512	1,501	1,499	1,512	1,521	1,521	1,511	1,501	1,499
Civilian employed	65,164	65,729	66,265	63,429	64,399	64,246	64,202	64,609	64,462
Unemployed	3,529	3,484	3,308	3,520	3,270	3,593	3,401	3,397	3,284
Unemployment rate[5]	5.0	4.9	4.7	5.1	4.7	5.2	4.9	4.9	4.7
Women, 16 years and over									
Noninstitutional population[2]	96,957	97,758	97,834	96,957	97,550	97,614	97,687	97,758	97,834
Labor force[2]	55,356	56,521	56,832	54,870	55,758	55,983	56,169	56,261	56,377
Participation rate[3]	57.1	57.8	58.1	56.6	57.2	57.4	57.5	57.6	57.6
Total employed[2]	52,063	53,155	53,404	51,766	52,900	53,029	53,175	53,097	53,164
Employment-population ratio[4]	53.7	54.4	54.6	53.4	54.2	54.3	54.4	54.3	54.3
Resident Armed Forces	161	165	167	161	163	163	162	165	167
Civilian employed	51,902	52,990	53,237	51,605	52,737	52,866	53,013	52,932	52,997
Unemployed	3,294	3,365	3,428	3,104	2,858	2,953	2,994	3,164	3,213
Unemployment rate[5]	6.0	6.0	6.0	5.7	5.1	5.3	5.3	5.6	5.7

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[1] The population and Armed Forces figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes members of the Armed Forces stationed in the United States.

[3] Labor force as a percent of the noninstitutional population.

[4] Total employment as a percent of the noninstitutional population.

[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

Table A-2. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
TOTAL									
Civilian noninstitutional population	184,729	186,329	186,483	184,729	185,897	186,024	186,181	186,329	186,483
Civilian labor force	123,888	125,569	126,238	121,658	123,264	123,659	123,610	124,102	123,956
Participation rate	67.1	67.4	67.7	65.9	66.3	66.5	66.4	66.6	66.5
Employed	117,066	118,719	119,502	115,034	117,136	117,113	117,215	117,541	117,459
Employment-population ratio[2]	63.4	63.7	64.1	62.3	63.0	63.0	63.0	63.1	63.0
Unemployed	6,823	6,850	6,736	6,624	6,128	6,546	6,395	6,561	6,497
Unemployment rate	5.5	5.5	5.3	5.4	5.0	5.3	5.2	5.3	5.2
Men, 20 years and over									
Civilian noninstitutional population	80,608	81,592	81,679	80,608	81,333	81,413	81,524	81,592	81,679
Civilian labor force	63,320	64,325	64,325	62,729	63,557	63,709	63,503	63,831	63,656
Participation rate	78.6	78.8	78.8	77.8	78.1	78.3	77.9	78.2	77.9
Employed	60,622	61,688	61,710	59,897	60,869	60,757	60,798	61,093	60,921
Employment-population ratio[2]	75.2	75.6	75.6	74.3	74.8	74.6	74.6	74.9	74.6
Agriculture	2,454	2,439	2,546	2,252	2,317	2,252	2,284	2,256	2,342
Nonagricultural industries	58,168	59,249	59,165	57,645	58,552	58,505	58,514	58,837	58,579
Unemployed	2,697	2,636	2,614	2,832	2,688	2,952	2,705	2,737	2,734
Unemployment rate	4.3	4.1	4.1	4.5	4.2	4.6	4.3	4.3	4.3
Women, 20 years and over									
Civilian noninstitutional population	89,588	90,526	90,607	89,588	90,242	90,318	90,432	90,526	90,607
Civilian labor force	50,426	51,918	52,038	50,807	51,851	51,992	52,171	52,231	52,463
Participation rate	56.3	57.4	57.4	56.7	57.5	57.6	57.7	57.7	57.9
Employed	47,783	49,392	49,326	48,242	49,484	49,544	49,690	49,661	49,850
Employment-population ratio[2]	53.3	54.6	54.4	53.8	54.8	54.9	54.9	54.9	55.0
Agriculture	650	684	743	549	664	615	628	610	627
Nonagricultural industries	47,133	48,708	48,583	47,693	48,819	48,929	49,062	49,051	49,223
Unemployed	2,643	2,526	2,712	2,565	2,367	2,448	2,480	2,570	2,613
Unemployment rate	5.2	4.9	5.2	5.0	4.6	4.7	4.8	4.9	5.0
Both sexes, 16 to 19 years									
Civilian noninstitutional population	14,533	14,211	14,196	14,533	14,323	14,293	14,224	14,211	14,196
Civilian labor force	10,143	9,326	9,875	8,122	7,856	7,958	7,936	8,040	7,837
Participation rate	69.8	65.6	69.6	55.9	54.9	55.7	55.8	56.6	55.2
Employed	8,661	7,639	8,465	6,895	6,783	6,812	6,726	6,786	6,687
Employment-population ratio[2]	59.6	53.8	59.6	47.4	47.4	47.7	47.3	47.8	47.1
Agriculture	438	371	425	259	224	237	200	230	249
Nonagricultural industries	8,223	7,268	8,041	6,636	6,559	6,575	6,526	6,556	6,438
Unemployed	1,482	1,687	1,410	1,227	1,073	1,146	1,210	1,254	1,150
Unemployment rate	14.6	18.1	14.3	15.1	13.7	14.4	15.2	15.6	14.7

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
WHITE									
Civilian noninstitutional population	158,279	159,297	159,400	158,279	159,020	159,098	159,200	159,297	159,400
Civilian labor force	106,381	107,762	108,113	104,651	105,988	106,312	106,164	106,455	106,424
Participation rate	67.2	67.6	67.8	66.1	66.7	66.8	66.7	66.8	66.8
Employed	101,432	102,869	103,215	99,761	101,554	101,458	101,465	101,693	101,581
Employment-population ratio[2]	64.1	64.6	64.8	63.0	63.9	63.8	63.7	63.8	63.7
Unemployed	4,949	4,893	4,898	4,890	4,434	4,854	4,699	4,762	4,843
Unemployment rate	4.7	4.5	4.5	4.7	4.2	4.6	4.4	4.5	4.6
Men, 20 years and over									
Civilian labor force	55,196	55,985	55,922	54,712	55,382	55,448	55,249	55,557	55,437
Participation rate	78.9	79.3	79.1	78.2	78.6	78.7	78.3	78.7	78.4
Employed	53,182	54,035	53,983	52,557	53,387	53,246	53,248	53,500	53,343
Employment-population ratio[2]	76.1	76.5	76.4	75.2	75.8	75.5	75.5	75.8	75.5
Unemployed	2,014	1,950	1,939	2,155	1,995	2,202	2,001	2,057	2,094
Unemployment rate	3.6	3.5	3.5	3.9	3.6	4.0	3.6	3.7	3.8
Women, 20 years and over									
Civilian labor force	42,568	43,847	43,869	42,958	43,780	44,016	44,084	44,050	44,302
Participation rate	55.7	56.9	56.8	56.2	56.9	57.2	57.2	57.1	57.4
Employed	40,671	42,067	41,902	41,124	42,115	42,207	42,282	42,236	42,411
Employment-population ratio[2]	53.2	54.6	54.3	53.8	54.7	54.8	54.9	54.8	55.0
Unemployed	1,897	1,780	1,967	1,834	1,665	1,810	1,803	1,814	1,891
Unemployment rate	4.5	4.1	4.5	4.3	3.8	4.1	4.1	4.1	4.3
Both sexes, 16 to 19 years									
Civilian labor force	8,617	7,931	8,322	6,981	6,826	6,848	6,831	6,848	6,685
Participation rate	72.6	68.6	72.1	58.9	58.7	59.0	59.0	59.2	57.9
Employed	7,579	6,768	7,330	6,080	6,052	6,005	5,936	5,957	5,827
Employment-population ratio[2]	63.9	58.5	63.5	51.3	52.1	51.8	51.3	51.5	50.5
Unemployed	1,038	1,163	992	901	774	843	895	891	858
Unemployment rate	12.0	14.7	11.9	12.9	11.3	12.3	13.1	13.0	12.8
Men	12.9	14.4	11.3	14.3	12.3	13.1	14.8	13.4	12.4
Women	11.1	15.0	12.6	11.4	10.2	11.5	11.2	12.6	13.4
BLACK									
Civilian noninstitutional population	20,715	21,012	21,038	20,715	20,930	20,956	20,986	21,012	21,038
Civilian labor force	13,700	13,751	13,978	13,283	13,425	13,287	13,444	13,600	13,555
Participation rate	66.1	65.4	66.4	64.1	64.1	63.4	64.1	64.7	64.4
Employed	12,031	12,023	12,364	11,761	11,961	11,846	11,968	11,982	12,082
Employment-population ratio[2]	58.1	57.2	58.8	56.8	57.1	56.5	57.0	57.0	57.4
Unemployed	1,669	1,728	1,614	1,522	1,464	1,442	1,476	1,618	1,473
Unemployment rate	12.2	12.6	11.5	11.5	10.9	10.8	11.0	11.9	10.9
Men, 20 years and over									
Civilian labor force	6,161	6,240	6,286	6,080	6,230	6,171	6,207	6,200	6,205
Participation rate	74.9	74.6	75.1	73.9	74.8	74.0	74.3	74.1	74.1
Employed	5,569	5,653	5,708	5,495	5,620	5,554	5,622	5,619	5,629
Employment-population ratio[2]	67.7	67.6	68.2	66.8	67.5	66.6	67.3	67.2	67.2
Unemployed	592	588	578	585	611	617	586	581	576
Unemployment rate	9.6	9.4	9.2	9.6	9.8	10.0	9.4	9.4	9.3
Women, 20 years and over									
Civilian labor force	6,284	6,343	6,400	6,286	6,315	6,227	6,340	6,405	6,394
Participation rate	61.0	60.6	61.0	61.0	60.5	59.6	60.6	61.2	61.0
Employed	5,616	5,680	5,742	5,640	5,739	5,677	5,740	5,732	5,759
Employment-population ratio[2]	54.5	54.2	54.7	54.7	55.0	54.3	54.9	54.7	54.9
Unemployed	668	663	658	646	576	550	600	674	635
Unemployment rate	10.6	10.5	10.3	10.3	9.1	8.8	9.5	10.5	9.9
Both sexes, 16 to 19 years									
Civilian labor force	1,254	1,168	1,291	917	880	889	897	994	956
Participation rate	57.4	53.7	59.4	42.0	40.5	40.9	41.3	45.7	44.0
Employed	846	690	913	626	602	615	606	631	694
Employment-population ratio[2]	38.7	31.7	42.0	28.7	27.7	28.3	27.9	29.0	31.9
Unemployed	409	478	378	291	278	274	291	363	262
Unemployment rate	32.6	40.9	29.3	31.7	31.6	30.8	32.4	36.5	27.4
Men	32.3	36.4	25.5	31.2	28.6	35.5	36.9	33.5	22.1
Women	32.9	46.4	33.6	32.4	34.8	26.2	28.4	40.2	33.1

See footnotes at end of table.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin—Continued

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
HISPANIC ORIGIN									
Civilian noninstitutional population	13,344	13,772	13,813	13,344	13,649	13,690	13,731	13,772	13,813
Civilian labor force	9,133	9,404	9,558	8,997	9,210	9,262	9,428	9,272	9,433
Participation rate	68.4	68.3	69.2	67.4	67.5	67.7	68.7	67.3	68.3
Employed	8,396	8,643	8,707	8,265	8,607	8,495	8,686	8,524	8,587
Employment-population ratio[2]	62.9	62.8	63.0	61.9	63.1	62.1	63.3	61.9	62.2
Unemployed	737	761	851	732	603	767	742	748	846
Unemployment rate	8.1	8.1	8.9	8.1	6.5	8.3	7.9	8.1	9.0

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
CHARACTERISTIC									
Civilian employed, 16 years and over	117,066	118,719	119,502	115,034	117,136	117,113	117,215	117,541	117,459
Married men, spouse present	40,657	41,225	41,253	40,518	41,063	40,890	40,902	41,102	41,089
Married women, spouse present	28,138	29,245	28,961	28,669	29,569	29,656	29,739	29,481	29,552
Women who maintain families	6,127	6,320	6,404	6,170	6,256	6,243	6,331	6,403	6,456
MAJOR INDUSTRY AND CLASS OF WORKER									
Agriculture:									
Wage and salary workers	1,853	1,818	1,982	1,572	1,656	1,554	1,610	1,550	1,695
Self-employed workers	1,482	1,504	1,556	1,362	1,403	1,419	1,356	1,412	1,434
Unpaid family workers	207	172	175	149	136	124	127	126	126
Nonagricultural industries:									
Wage and salary workers	104,659	106,357	106,868	103,189	104,982	104,985	105,245	105,519	105,321
Government	16,433	16,881	16,888	17,031	17,382	17,180	17,230	17,261	17,519
Private industries	88,226	89,476	89,981	86,158	87,600	87,806	88,015	88,259	87,803
Private households	1,251	1,220	1,207	1,132	1,163	1,117	1,128	1,140	1,093
Other industries	86,975	88,256	88,774	85,026	86,437	86,689	86,887	87,118	86,710
Self-employed workers	8,605	8,613	8,675	8,531	8,645	8,671	8,516	8,570	8,606
Unpaid family workers	259	255	245	251	332	281	322	241	239
PERSONS AT WORK PART TIME[1]									
All industries:									
Part time for economic reasons	6,141	5,413	5,500	5,341	4,968	5,143	4,837	4,957	4,750
Slack work	2,450	2,223	2,299	2,471	2,232	2,373	2,296	2,318	2,311
Could only find part-time work	3,309	2,713	2,788	2,538	2,393	2,425	2,343	2,289	2,138
Voluntary part time	12,357	13,738	12,882	15,026	15,561	15,498	15,316	15,416	15,652
Nonagricultural industries:									
Part time for economic reasons	5,869	5,199	5,199	5,102	4,709	4,930	4,609	4,801	4,505
Slack work	2,292	2,105	2,161	2,334	2,048	2,243	2,102	2,190	2,185
Could only find part-time work	3,214	2,625	2,647	2,493	2,317	2,369	2,301	2,236	2,057
Voluntary part time	11,911	13,240	12,419	14,606	15,127	15,060	14,976	14,977	15,219

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial dispute.

Table A-5. Range of unemployment measures based on varying definitions of unemployment and the labor force, seasonally adjusted

(Percent)

Measure	Quarterly averages					Monthly data		
	1988			1989		1989		
	II	III	IV	I	II	May	June	July
U-1 Persons unemployed 15 weeks or longer as a percent of the civilian labor force	1.3	1.3	1.2	1.1	1.1	1.1	1.0	1.2
U-2 Job losers as a percent of the civilian labor force	2.5	2.5	2.5	2.4	2.3	2.2	2.2	2.4
U-3 Unemployed persons 25 years and over as a percent of the civilian labor force	4.2	4.2	4.1	4.0	4.0	4.0	4.0	4.0
U-4 Unemployed full-time jobseekers as a percent of the full-time civilian labor force	5.1	5.1	5.0	4.9	4.9	4.8	4.8	4.9
U-5a Total unemployed as a percent of the labor force, including the resident Armed Forces	5.4	5.4	5.3	5.1	5.2	5.1	5.2	5.2
U-5b Total unemployed as a percent of the civilian labor force	5.5	5.5	5.3	5.2	5.3	5.2	5.3	5.2
U-6 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons as a percent of the civilian labor force less 1/2 of the part-time labor force	7.6	7.6	7.5	7.2	7.2	7.1	7.2	7.2
U-7 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons plus discouraged workers as a percent of the civilian labor force plus discouraged workers less 1/2 of the part-time labor force	8.3	8.4	8.2	7.9	7.9	N.A.	N.A.	N.A.

N.A. = not available.

Table A-6. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
CHARACTERISTIC									
Total, 16 years and over	6,624	6,561	6,497	5.4	5.0	5.3	5.2	5.3	5.2
Men, 16 years and over	3,520	3,397	3,284	5.3	4.8	5.3	5.0	5.0	4.8
Men, 20 years and over	2,832	2,737	2,734	4.5	4.2	4.6	4.3	4.3	4.3
Women, 16 years and over	3,104	3,164	3,213	5.7	5.1	5.3	5.3	5.6	5.7
Women, 20 years and over	2,565	2,570	2,613	5.0	4.6	4.7	4.8	4.9	5.0
Both sexes, 16 to 19 years	1,227	1,254	1,150	15.1	13.7	14.4	15.2	15.6	14.7
Married men, spouse present	1,280	1,196	1,207	3.1	2.9	3.2	2.9	2.8	2.9
Married women, spouse present	1,190	1,177	1,163	4.0	3.5	4.0	3.8	3.8	3.8
Women who maintain families	571	549	617	8.5	7.9	7.6	8.3	7.9	8.7
Full-time workers	5,215	5,131	5,218	5.0	4.8	5.0	4.8	4.8	4.9
Part-time workers	1,419	1,413	1,320	8.0	6.2	7.2	6.9	7.7	7.2
Labor force time lost[2]	—	—	—	6.4	5.8	6.0	5.9	6.1	6.0
INDUSTRY									
Nonagricultural private wage and salary workers	4 961	4,971	5,028	5.4	5.0	5.4	5.2	5.3	5.4
Goods-producing industries	1,841	1,827	1,817	6.3	5.8	6.0	5.8	6.2	6.2
Mining	42	27	39	5.4	7.0	5.6	4.5	3.7	5.5
Construction	649	647	670	10.4	9.4	9.7	9.3	10.0	10.5
Manufacturing	1,150	1,154	1,108	5.2	4.8	4.9	4.9	5.2	5.0
Durable goods	641	600	609	4.9	4.7	4.7	4.5	4.6	4.7
Nondurable goods	509	554	499	5.6	4.9	5.2	5.5	6.1	5.5
Service-producing industries	3,120	3,145	3,211	5.0	4.6	5.1	4.9	4.9	5.0
Transportation and public utilities	231	284	273	3.6	3.9	4.0	4.0	4.4	4.2
Wholesale and retail trade	1,419	1,423	1,460	6.2	5.6	5.9	5.5	6.0	6.2
Finance and service industries	1,470	1,438	1,477	4.5	4.1	4.8	4.7	4.3	4.4
Government workers	523	528	511	3.0	2.6	2.7	2.9	3.0	2.8
Agricultural wage and salary workers	194	192	157	11.0	8.9	10.5	10.3	11.0	8.5

[1] Unemployment as a percent of the civilian labor force.

[2] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours

Table A-7. Duration of unemployment

(Numbers in thousands)

Weeks of unemployment	Not seasonally adjusted			Seasonally adjusted					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
DURATION									
Less than 5 weeks	3,164	3,905	3,338	2,985	3,055	3,090	3,041	3,309	3,149
5 to 14 weeks	2,186	1,701	2,070	2,041	1,821	2,034	2,017	1,999	1,927
15 weeks and over	1,473	1,243	1,328	1,619	1,310	1,426	1,313	1,258	1,472
15 to 26 weeks	685	644	712	826	648	689	702	659	846
27 weeks and over	788	599	616	793	663	737	611	599	626
Average (mean) duration, in weeks	12.7	10.5	11.2	13.5	12.4	12.7	11.8	11.1	12.0
Median duration, in weeks	5.6	4.4	5.1	6.2	5.4	5.4	5.3	5.5	5.6
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	46.4	57.0	49.5	44.9	49.4	47.2	47.7	50.4	48.1
5 to 14 weeks	32.0	24.8	30.7	30.7	29.4	31.1	31.7	30.4	29.4
15 weeks and over	21.6	18.2	19.7	24.4	21.2	21.8	20.6	19.2	22.5
15 to 26 weeks	10.0	9.4	10.6	12.4	10.5	10.5	11.0	10.0	12.9
27 weeks and over	11.5	8.7	9.1	11.9	10.7	11.3	9.6	9.1	9.6

Table A-8. Reason for unemployment

(Numbers in thousands)

Reasons	Not seasonally adjusted			Seasonally adjusted					
	July 1988	June 1989	July 1989	July 1988	Mar 1989	Apr. 1989	May 1989	June 1989	July 1989
NUMBER OF UNEMPLOYED									
Job losers	2,957	2,563	2,797	3,085	2,831	2,984	2,724	2,765	2,920
On layoff	781	679	755	853	808	847	790	806	822
Other job losers	2,176	1,884	2,042	2,232	2,023	2,137	1,934	1,958	2,097
Job leavers	975	947	1,064	923	885	978	1,114	1,023	1,010
Reentrants	1,880	2,197	1,946	1,883	1,730	1,894	1,852	2,051	1,934
New entrants	1,011	1,143	930	799	713	671	683	742	724
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	43.3	37.4	41.5	46.1	46.0	45.7	42.7	42.0	44.3
On layoff	11.4	9.9	11.2	12.8	13.1	13.0	12.4	12.3	12.5
Other job losers	31.9	27.5	30.3	33.4	32.8	32.7	30.3	29.8	31.8
Job leavers	14.3	13.8	15.8	13.8	14.4	15.0	17.5	15.5	15.3
Reentrants	27.5	32.1	28.9	28.1	28.1	29.0	29.1	31.2	29.4
New entrants	14.8	16.7	13.8	11.9	11.6	10.3	10.7	11.3	11.0
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers	2.4	2.0	2.2	2.5	2.3	2.4	2.2	2.2	2.4
Job leavers	.8	.8	.8	.8	.7	.8	.9	.8	.8
Reentrants	1.5	1.7	1.5	1.5	1.4	1.5	1.5	1.7	1.6
New entrants	.8	.9	.7	.7	.6	.5	.6	.6	.6

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Sex and age	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
Total, 16 years and over	6,624	6,561	6,497	5.4	5.0	5.3	5.2	5.3	5.2
16 to 24 years	2,465	2,544	2,381	10.9	9.8	10.5	10.4	11.3	10.7
16 to 19 years	1,227	1,254	1,150	15.1	13.7	14.4	15.2	15.6	14.7
16 to 17 years	571	535	529	17.5	15.3	14.9	16.2	17.5	17.8
18 to 19 years	628	737	603	13.1	12.5	13.8	14.5	14.9	12.4
20 to 24 years	1,238	1,290	1,231	8.5	7.7	8.4	7.7	8.9	8.6
25 years and over	4,143	4,038	4,099	4.2	3.9	4.1	4.0	4.0	4.0
25 to 54 years	3,702	3,503	3,641	4.4	4.1	4.4	4.2	4.1	4.2
55 years and over	457	515	485	3.1	2.6	2.9	2.9	3.3	3.1
Men, 16 years and over	3,520	3,397	3,284	5.3	4.8	5.3	5.0	5.0	4.8
16 to 24 years	1,331	1,358	1,198	11.3	9.7	10.7	11.0	11.5	10.4
16 to 19 years	688	660	550	16.3	14.2	15.5	17.0	15.8	13.4
16 to 17 years	307	323	268	18.1	15.8	17.0	18.8	20.0	17.4
18 to 19 years	359	347	270	14.4	13.2	14.6	15.7	13.6	10.7
20 to 24 years	643	698	648	8.5	7.2	8.0	7.7	9.2	8.7
25 years and over	2,191	2,057	2,095	4.0	3.8	4.2	3.7	3.7	3.7
25 to 54 years	1,936	1,768	1,840	4.2	4.0	4.4	3.9	3.7	3.9
55 years and over	278	270	274	3.2	2.8	3.2	2.9	3.0	3.1
Women, 16 years and over	3,104	3,164	3,213	5.7	5.1	5.3	5.3	5.6	5.7
16 to 24 years	1,134	1,186	1,185	10.5	10.0	10.4	9.8	11.0	11.1
16 to 19 years	539	594	600	13.8	13.1	13.2	13.4	15.4	16.0
16 to 17 years	264	212	261	16.8	14.8	12.7	13.4	14.7	18.3
18 to 19 years	269	390	333	11.6	11.7	12.8	13.3	16.2	14.4
20 to 24 years	595	592	585	8.6	8.3	8.9	7.7	8.6	8.4
25 years and over	1,952	1,979	2,004	4.4	4.0	4.1	4.4	4.4	4.4
25 to 54 years	1,766	1,735	1,801	4.7	4.3	4.4	4.6	4.5	4.6
55 years and over	179	245	211	2.9	2.3	2.6	3.0	3.8	3.2

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[1] Unemployment as a percent of the civilian labor force.

Table A-10. Employment status of black and other workers

(Numbers in thousands)

Employment status	Not seasonally adjusted			Seasonally adjusted[1]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
Civilian noninstitutional population	26,451	27,031	27,082	26,451	26,877	26,926	26,981	27,031	27,082
Civilian labor force	17,508	17,806	18,125	17,015	17,347	17,319	17,364	17,607	17,618
Participation rate	66.2	65.9	66.9	64.3	64.5	64.3	64.4	65.1	65.1
Employed	15,633	15,850	16,287	15,301	15,651	15,656	15,707	15,795	15,934
Employment-population ratio[2]	59.1	58.6	60.1	57.8	58.2	58.1	58.2	58.4	58.8
Unemployed	1,874	1,956	1,838	1,714	1,696	1,664	1,657	1,812	1,684
Unemployment rate	10.7	11.0	10.1	10.1	9.8	9.6	9.5	10.3	9.6
Not in labor force	8,943	9,225	8,957	9,436	9,530	9,607	9,617	9,424	9,464

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-11. Occupational status of the employed and unemployed, not seasonally adjusted

(Numbers in thousands)

Occupation	Civilian employed		Unemployed		Unemployment rate	
	July 1988	July 1989	July 1988	July 1989	July 1988	July 1989
Total, 16 years and over[1]	117,086	119,502	6,823	6,736	5.5	5.3
Managerial and professional specialty	29,006	30,069	677	666	2.3	2.2
Executive, administrative, and managerial	14,541	15,163	316	336	2.1	2.2
Professional specialty	14,465	14,906	361	330	2.4	2.2
Technical, sales, and administrative support	35,880	36,552	1,537	1,556	4.1	4.1
Technicians and related support	3,659	3,797	89	79	2.4	2.0
Sales occupations	13,926	14,181	626	659	4.3	4.4
Administrative support, including clerical	18,295	18,574	822	818	4.3	4.2
Service occupations	15,635	16,195	1,173	1,135	7.0	6.5
Private household	992	942	60	59	5.7	5.9
Protective service	2,028	2,013	79	76	3.7	3.6
Service, except private household and protective	12,615	13,239	1,034	1,001	7.6	7.0
Precision production, craft, and repair	14,134	14,059	676	583	4.6	4.0
Mechanics and repairers	4,623	4,452	141	108	3.0	2.4
Construction trades	5,364	5,500	338	347	5.9	5.9
Other precision production, craft, and repair	4,146	4,108	198	128	4.6	3.0
Operators, fabricators, and laborers	18,432	18,488	1,445	1,620	7.3	8.1
Machine operators, assemblers, and inspectors	8,211	8,266	640	704	7.2	7.8
Transportation and material moving occupations	4,900	5,028	277	320	5.4	6.0
Handlers, equipment cleaners, helpers, and laborers	5,321	5,194	527	597	9.0	10.3
Construction laborers	971	866	124	147	11.4	14.5
Other handlers, equipment cleaners, helpers, and laborers	4,350	4,328	403	450	8.5	9.4
Farming, forestry, and fishing	3,979	4,139	255	203	6.0	4.7

[1] Persons with no previous work experience and those whose last job was in the Armed Forces are included in the unemployed total.

Table A-12. Employment status of male Vietnam-era veterans and nonveterans by age, not seasonally adjusted

(Numbers in thousands)

Veteran status and age	Civilian noninstitutional population		Civilian labor force							
			Total		Employed		Unemployed			
							Number		Percent of labor force	
	July 1988	July 1989	July 1988	July 1989	July 1988	July 1989	July 1988	July 1989	July 1988	July 1989
VIETNAM-ERA VETERANS										
Total, 30 years and over	7,905	7,927	7,261	7,257	7,044	6,989	237	268	3.3	3.7
30 to 44 years	5,910	5,489	5,653	5,232	5,455	5,034	198	198	3.5	3.8
30 to 34 years	665	472	646	447	621	418	25	29	3.9	6.5
35 to 39 years	2,142	1,731	2,034	1,621	1,957	1,551	77	70	3.8	4.3
40 to 44 years	3,083	3,286	2,973	3,164	2,877	3,065	96	99	3.2	3.1
45 years and over	1,995	2,438	1,628	2,025	1,589	1,955	39	70	2.4	3.5
NONVETERANS										
Total, 30 to 44 years	20,450	21,512	19,358	20,404	18,630	19,684	728	720	3.8	3.5
30 to 34 years	9,159	9,384	8,735	8,961	8,385	8,635	350	346	4.0	3.9
35 to 39 years	6,810	7,451	6,451	7,085	6,210	6,841	241	224	3.7	3.2
40 to 44 years	4,481	4,677	4,172	4,358	4,035	4,208	137	150	3.3	3.4

NOTE: Male Vietnam-era veterans are men who served in the Armed Forces between August 5, 1964 and May 7, 1975. Nonveterans are men who have never served in the Armed Forces; published data are limited to those 30 to 44 years of age, the group that most closely corresponds to the bulk of the Vietnam-era veteran population.

Table A-13. Employment status of the civilian population for eleven large States

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
California									
Civilian noninstitutional population	20,854	21,122	21,147	20,854	21,037	21,059	21,085	21,122	21,147
Civilian labor force	14,192	14,356	14,603	14,028	14,120	14,096	14,331	14,286	14,443
Employed	13,359	13,570	13,751	13,269	13,480	13,339	13,546	13,489	13,674
Unemployed	832	786	851	759	640	757	785	797	769
Unemployment rate	5.9	5.5	5.8	5.4	4.5	5.4	5.5	5.6	5.3
Florida									
Civilian noninstitutional population	9,710	9,942	9,965	9,710	9,881	9,902	9,924	9,942	9,965
Civilian labor force	6,210	6,380	6,383	6,121	6,179	6,245	6,227	6,344	6,286
Employed	5,896	5,994	5,997	5,838	5,880	5,922	5,827	5,960	5,930
Unemployed	314	387	386	283	299	323	400	384	356
Unemployment rate	5.1	6.1	6.0	4.6	4.8	5.2	6.4	6.1	5.7
Illinois									
Civilian noninstitutional population	8,724	8,701	8,699	8,724	8,702	8,699	8,698	8,701	8,699
Civilian labor force	5,827	6,004	5,964	5,727	5,983	5,960	5,899	5,934	5,860
Employed	5,468	5,658	5,650	5,356	5,648	5,640	5,563	5,609	5,533
Unemployed	359	346	315	371	335	320	336	325	327
Unemployment rate	6.2	5.8	5.3	6.5	5.6	5.4	5.7	5.5	5.6
Massachusetts									
Civilian noninstitutional population	4,597	4,600	4,601	4,597	4,598	4,598	4,598	4,600	4,601
Civilian labor force	3,195	3,223	3,245	3,133	3,160	3,197	3,196	3,166	3,183
Employed	3,080	3,097	3,097	3,023	3,051	3,077	3,080	3,040	3,041
Unemployed	115	127	148	110	109	120	116	126	142
Unemployment rate	3.6	3.9	4.6	3.5	3.4	3.8	3.6	4.0	4.5
Michigan									
Civilian noninstitutional population	7,029	7,097	7,104	7,029	7,081	7,087	7,095	7,097	7,104
Civilian labor force	4,678	4,678	4,728	4,597	4,620	4,573	4,581	4,630	4,646
Employed	4,314	4,327	4,383	4,259	4,316	4,296	4,273	4,291	4,331
Unemployed	364	351	345	338	304	277	308	339	315
Unemployment rate	7.8	7.5	7.3	7.4	6.6	6.1	6.7	7.3	6.8
New Jersey									
Civilian noninstitutional population	6,039	6,062	6,064	6,039	6,055	6,057	6,059	6,062	6,064
Civilian labor force	4,051	4,038	4,045	3,969	4,010	3,977	3,952	3,971	3,976
Employed	3,882	3,872	3,864	3,823	3,890	3,816	3,834	3,806	3,814
Unemployed	168	166	182	146	120	161	118	165	162
Unemployment rate	4.2	4.1	4.5	3.7	3.0	4.0	3.0	4.2	4.1
New York									
Civilian noninstitutional population	13,799	13,812	13,814	13,799	13,806	13,807	13,809	13,812	13,814
Civilian labor force	8,728	8,771	8,864	8,543	8,540	8,841	8,770	8,705	8,674
Employed	8,363	8,360	8,453	8,180	8,173	8,328	8,307	8,266	8,269
Unemployed	365	411	410	363	367	513	463	439	405
Unemployment rate	4.2	4.7	4.6	4.2	4.3	5.8	5.3	5.0	4.7
North Carolina									
Civilian noninstitutional population	4,917	[illegible]	5,014	4,917	4,983	4,991	5,000	5,006	5,014
Civilian labor force	3,430	3,489	3,528	3,346	3,415	3,478	3,467	3,463	3,444
Employed	3,321	3,358	3,409	3,240	3,311	3,330	3,340	3,339	3,327
Unemployed	109	131	119	106	104	148	127	124	117
Unemployment rate	3.2	3.7	3.4	3.2	3.0	4.3	3.7	3.6	3.4
Ohio									
Civilian noninstitutional population	8,249	8,313	8,320	8,249	8,298	8,303	8,310	8,313	8,320
Civilian labor force	5,366	5,537	5,526	5,294	5,428	5,381	5,434	5,490	5,450
Employed	5,092	5,216	5,248	5,004	5,144	5,093	5,138	5,183	5,157
Unemployed	273	321	277	290	284	288	296	307	293
Unemployment rate	5.1	5.8	5.0	5.5	5.2	5.4	5.4	5.6	5.4

See footnotes at end of table

Table A-13. Employment status of the civilian population for eleven large States—Continued

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	July 1988	June 1989	July 1989	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989	July 1989
Pennsylvania									
Civilian noninstitutional population	9,373	9,427	9,433	9,373	9,413	9,418	9,424	9,427	9,433
Civilian labor force	5,912	5,981	5,961	5,770	6,012	5,940	5,920	5,917	5,823
Employed	5,596	5,709	5,684	5,469	5,778	5,677	5,649	5,678	5,562
Unemployed	316	272	277	301	234	263	271	239	261
Unemployment rate	5.3	4.6	4.6	5.2	3.9	4.4	4.6	4.0	4.5
Texas									
Civilian noninstitutional population	12,010	11,990	11,969	12,010	11,991	11,988	11,967	11,990	11,969
Civilian labor force	8,448	8,333	8,428	8,262	8,283	8,350	8,250	8,223	8,241
Employed	7,889	7,745	7,813	7,719	7,788	7,729	7,762	7,721	7,645
Unemployed	559	588	614	543	495	621	488	502	596
Unemployment rate	6.6	7.1	7.3	6.6	6.0	7.4	5.9	6.1	7.2

[1] These are the official Bureau of Labor Statistics' estimates used in the administration of Federal fund allocation programs.

[2] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and the seasonally adjusted columns.

Table B-1. Employees on nonagricultural payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1988	May 1989	June 1989p/	July 1989p/	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989p/	July 1989p/
Total	105,560	108,745	109,484	108,507	105,768	107,888	108,101	108,310	108,560	108,729
Total private	89,120	90,715	91,724	91,779	88,418	90,291	90,475	90,623	90,868	91,062
Goods-producing industries	25,547	25,663	25,972	25,915	25,323	25,646	25,671	25,672	25,651	25,680
Mining	732	719	719	712	725	714	720	722	715	704
Oil and gas extraction	411.4	395.9	400.6	404.0	410	397	400	401	401	402
Construction	5,451	5,325	5,492	5,626	5,150	5,252	5,279	5,283	5,281	5,318
General building contractors	1,443.6	1,383.9	1,431.0	1,465.5	1,372	1,380	1,377	1,388	1,385	1,393
Manufacturing	19,364	19,619	19,761	19,577	19,448	19,688	19,672	19,667	19,655	19,658
Production workers	13,179	13,390	13,492	13,316	13,295	13,442	13,438	13,426	13,405	13,427
Durable goods	11,415	11,587	11,629	11,490	11,475	11,604	11,600	11,594	11,567	11,549
Production workers	7,591	7,738	7,760	7,624	7,672	7,749	7,744	7,735	7,706	7,702
Lumber and wood products	782.4	789.1	786.3	787.0	762	777	772	771	769	767
Furniture and fixtures	519.8	531.3	531.4	522.9	531	535	537	534	534	535
Stone, clay, and glass products	612.4	609.2	616.0	611.2	602	607	606	604	603	601
Primary metal industries	778.1	786.9	790.9	778.9	780	788	788	787	788	788
Blast furnaces and basic steel products	279.2	275.5	277.9	275.3	278	276	275	276	277	274
Fabricated metal products	1,422.1	1,451.0	1,456.3	1,434.4	1,438	1,457	1,454	1,452	1,449	1,450
Machinery, except electrical	2,082.9	2,153.9	2,161.7	2,147.3	2,092	2,143	2,144	2,150	2,151	2,156
Electrical and electronic equipment	2,059.3	2,039.6	2,041.6	2,019.5	2,072	2,060	2,058	2,050	2,040	2,032
Transportation equipment	2,035.0	2,078.0	2,068.1	2,027.8	2,058	2,071	2,073	2,076	2,062	2,050
Motor vehicles and equipment	846.6	879.4	868.1	832.9	862	869	875	876	860	848
Instruments and related products	751.3	776.6	782.4	782.1	751	776	777	778	779	782
Miscellaneous manufacturing	380.5	391.4	394.4	379.3	389	390	391	392	392	388
Nondurable goods	7,949	8,032	8,132	8,087	7,973	8,076	8,072	8,073	8,088	8,109
Production workers	5,588	5,652	5,732	5,692	5,623	5,693	5,686	5,691	5,699	5,725
Food and kindred products	1,661.1	1,616.4	1,668.8	1,708.7	1,628	1,655	1,657	1,656	1,664	1,675
Tobacco manufactures	51.7	48.2	49.5	49.7	55	56	54	53	53	53
Textile mill products	717.3	728.5	733.1	717.8	730	729	728	728	729	730
Apparel and other textile products	1,057.8	1,099.5	1,104.1	1,064.6	1,091	1,101	1,098	1,095	1,093	1,098
Paper and allied products	696.4	694.6	703.9	700.2	695	697	696	697	697	699
Printing and publishing	1,560.7	1,601.8	1,612.6	1,607.9	1,564	1,600	1,601	1,603	1,609	1,611
Chemicals and allied products	1,074.6	1,092.2	1,103.4	1,101.9	1,068	1,088	1,090	1,094	1,096	1,094
Petroleum and coal products	165.3	162.9	165.6	166.2	162	161	162	162	163	163
Rubber and misc. plastics products	825.9	844.3	847.4	833.8	836	845	843	843	842	844
Leather and leather products	138.4	142.2	143.5	136.4	144	144	143	142	142	142
Service-producing industries	80,013	83,082	83,512	82,592	80,445	82,242	82,430	82,638	82,909	83,049
Transportation and public utilities	5,561	5,699	5,754	5,740	5,557	5,666	5,682	5,700	5,716	5,739
Transportation	3,322	3,487	3,525	3,503	3,340	3,452	3,467	3,484	3,500	3,524
Communication and public utilities	2,239	2,212	2,229	2,237	2,217	2,214	2,215	2,216	2,216	2,215
Wholesale trade	6,077	6,217	6,265	6,276	6,038	6,197	6,206	6,222	6,229	6,234
Durable goods	3,590	3,685	3,711	3,718	3,569	3,676	3,676	3,685	3,693	3,696
Nondurable goods	2,487	2,532	2,554	2,558	2,469	2,521	2,530	2,537	2,536	2,538
Retail trade	19,240	19,528	19,724	19,698	19,139	19,488	19,489	19,528	19,548	19,600
General merchandise stores	2,398.9	2,416.3	2,430.5	2,430.8	2,457	2,490	2,492	2,491	2,490	2,488
Food stores	3,118.9	3,228.5	3,271.6	3,291.0	3,105	3,223	3,233	3,245	3,262	3,275
Automotive dealers and service stations	2,123.4	2,162.9	2,175.5	2,184.6	2,096	2,155	2,159	2,159	2,154	2,157
Eating and drinking places	6,446.8	6,462.2	6,572.0	6,535.4	6,284	6,322	6,335	6,348	6,362	6,370
Finance, insurance, and real estate	6,773	6,790	6,871	6,910	6,678	6,774	6,776	6,790	6,801	6,812
Finance	3,317	3,313	3,341	3,355	3,284	3,316	3,312	3,320	3,318	3,322
Insurance	2,094	2,123	2,134	2,142	2,084	2,117	2,119	2,123	2,128	2,131
Real estate	1,362	1,354	1,396	1,413	1,310	1,341	1,345	1,347	1,355	1,359
Services	25,922	26,818	27,138	27,240	25,683	26,520	26,651	26,711	26,923	26,997
Business services	5,635.5	5,758.5	5,827.5	5,843.0	5,595	5,736	5,760	5,776	5,799	5,802
Health services	7,188.1	7,555.0	7,645.7	7,682.0	7,153	7,488	7,528	7,570	7,615	7,644
Government	16,440	18,030	17,760	16,728	17,350	17,597	17,626	17,687	17,692	17,667
Federal	2,992	3,005	3,024	3,009	2,958	2,982	2,982	2,999	2,994	2,976
State	3,853	4,181	4,014	3,915	4,071	4,102	4,111	4,119	4,134	4,138
Local	9,595	10,844	10,722	9,804	10,321	10,513	10,533	10,569	10,564	10,553

p = preliminary.

Table B-2. Average weekly hours of production or nonsupervisory workers[1] on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1988	May 1989	June 1989p	July 1989p	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989p	July 1989p
Total private	35.1	34.5	34.8	35.1	34.8	34.7	34.9	34.6	34.6	34.9
Mining	42.4	42.0	42.8	43.4	(2)	(2)	(2)	(2)	(2)	(2)
Construction	38.6	37.7	38.8	39.0	(2)	(2)	(2)	(2)	(2)	(2)
Manufacturing	40.7	40.9	41.1	40.5	41.1	41.0	41.3	41.0	41.0	41.0
Overtime hours	3.7	3.6	3.8	3.7	3.9	4.0	3.9	3.8	3.8	3.9
Durable goods	41.2	41.5	41.7	40.9	41.8	41.7	41.9	41.5	41.5	41.5
Overtime hours	3.8	3.8	3.9	3.7	4.1	4.1	4.1	3.9	3.9	4.0
Lumber and wood products	40.3	40.1	40.4	39.3	40.4	40.0	40.5	39.7	39.8	39.4
Furniture and fixtures	38.9	39.0	39.3	38.3	39.6	39.8	39.9	39.4	39.3	39.0
Stone, clay, and glass products	42.4	42.4	42.6	42.5	42.2	42.2	42.5	41.9	42.2	42.3
Primary metal industries	43.1	43.1	43.3	42.7	43.5	43.5	43.3	43.2	43.3	43.1
Blast furnaces and basic steel products	44.0	43.6	43.8	43.2	44.0	44.1	43.5	43.6	43.6	43.2
Fabricated metal products	41.1	41.5	41.7	40.7	41.9	41.8	41.9	41.7	41.5	41.5
Machinery, except electrical	42.3	42.3	42.6	41.8	42.8	42.5	42.7	42.5	42.5	42.3
Electrical and electronic equipment	40.4	40.4	40.8	40.1	41.0	40.6	41.0	40.7	40.7	40.7
Transportation equipment	41.7	42.7	42.6	41.7	42.7	43.1	42.8	42.5	42.5	42.7
Motor vehicles and equipment	41.7	43.3	43.0	41.3	42.9	43.9	43.3	42.8	42.7	42.5
Instruments and related products	41.1	40.8	41.3	41.0	41.7	41.1	41.5	41.1	41.3	41.6
Miscellaneous manufacturing	38.6	39.4	39.4	38.2	39.3	39.5	39.8	39.6	39.4	38.9
Nondurable goods	39.9	40.8	40.3	40.0	40.2	40.1	40.4	40.2	40.2	40.3
Overtime hours	3.6	3.5	3.6	3.7	3.7	3.8	3.8	3.7	3.6	3.8
Food and kindred products	40.3	40.4	40.6	41.2	40.4	40.4	40.7	40.5	40.6	41.3
Tobacco manufactures	39.3	39.5	38.9	34.6	(2)	(2)	(2)	(2)	(2)	(2)
Textile mill products	40.4	41.2	41.6	40.8	41.0	41.1	41.7	41.4	41.4	41.4
Apparel and other textile products	36.7	37.0	37.3	36.8	37.0	36.9	37.6	37.1	37.0	37.1
Paper and allied products	42.9	43.1	43.3	42.9	43.2	43.3	43.4	43.3	43.4	43.2
Printing and publishing	37.8	37.4	37.4	37.4	38.0	37.9	37.9	37.7	37.8	37.6
Chemicals and allied products	42.0	42.1	42.5	42.2	42.3	42.3	42.6	42.1	42.5	42.5
Petroleum and coal products	45.3	43.9	44.9	46.2	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and misc. plastics products	41.1	41.5	41.5	40.7	41.7	41.6	41.6	41.5	41.4	41.3
Leather and leather products	37.3	37.6	38.7	37.6	37.2	38.0	38.3	37.4	37.9	37.5
Transportation and public utilities	39.8	39.1	39.6	40.3	39.4	39.4	40.1	39.5	39.4	39.9
Wholesale trade	38.3	37.9	38.1	38.3	38.1	38.1	38.3	37.9	38.0	38.1
Retail trade	30.0	28.8	29.2	29.9	29.3	28.9	29.1	28.9	28.9	29.2
Finance, insurance, and real estate	36.1	35.6	35.8	36.4	(2)	(2)	(2)	(2)	(2)	(2)
Services	33.0	32.4	32.7	33.1	32.7	32.6	32.8	32.5	32.5	32.8

[1] Data relate to production workers in mining and manufacturing; construction workers in construction; and nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance; insurance, and real estate; and services. These groups account for approximately four-fifths of the total employees on private nonagricultural payrolls.

[2] These series are not published seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficent precision.
p = preliminary.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	July 1988	May 1989	June 1989p/	July 1989p/	July 1988	May 1989	June 1989p/	July 1989p/
Total private	$9.24	$9.59	$9.58	$9.63	$324.32	$330.86	$333.38	$338.01
Seasonally adjusted	9.31	9.60	9.62	9.70	323.99	332.16	332.85	338.53
Mining	12.72	13.13	13.04	13.07	539.33	551.46	558.11	567.24
Construction	12.96	13.28	13.23	13.32	500.26	500.66	502.74	519.48
Manufacturing	10.17	10.42	10.44	10.47	413.92	426.18	429.08	424.04
Durable goods	10.67	10.94	10.98	10.99	439.60	454.01	457.87	449.49
Lumber and wood products	8.66	8.79	8.86	8.92	349.00	352.48	357.94	350.56
Furniture and fixtures	7.99	8.16	8.22	8.26	310.81	318.24	323.05	316.36
Stone, clay, and glass products	10.53	10.69	10.74	10.78	446.47	453.26	457.52	458.15
Primary metal industries	12.22	12.25	12.32	12.35	526.68	527.98	533.46	527.35
Blast furnaces and basic steel products	14.09	14.06	14.15	14.17	619.96	613.02	619.77	612.14
Fabricated metal products	10.20	10.49	10.50	10.54	419.22	435.34	437.85	428.98
Machinery, except electrical	10.98	11.29	11.32	11.34	464.45	477.57	482.23	474.01
Electrical and electronic equipment	10.13	10.33	10.38	10.44	409.25	417.33	423.50	418.64
Transportation equipment	13.19	13.58	13.65	13.57	550.02	579.87	581.49	565.87
Motor vehicles and equipment	13.79	14.17	14.22	14.02	575.04	613.56	611.46	579.03
Instruments and related products	9.96	10.17	10.25	10.32	409.36	414.94	423.33	423.12
Miscellaneous manufacturing	7.98	8.24	8.23	8.31	308.03	324.66	324.26	317.44
Nondurable goods	9.46	9.68	9.69	9.77	377.45	387.20	390.51	390.80
Food and kindred products	9.12	9.34	9.37	9.35	367.54	377.34	380.42	385.22
Tobacco manufactures	15.78	16.13	16.48	16.24	620.15	637.14	641.07	561.90
Textile mill products	7.31	7.62	7.65	7.64	295.32	313.94	318.24	311.71
Apparel and other textile products	6.03	6.32	6.33	6.31	221.30	233.84	236.11	232.21
Paper and allied products	11.72	11.89	11.90	12.08	502.79	512.46	515.27	518.23
Printing and publishing	10.48	10.76	10.74	10.80	396.14	402.42	401.68	403.92
Chemicals and allied products	12.70	12.98	12.97	13.11	533.40	546.46	551.23	553.24
Petroleum and coal products	14.93	15.34	15.24	15.35	676.33	673.43	684.28	709.17
Rubber and misc. plastics products	9.15	9.40	9.40	9.47	376.07	390.10	390.10	385.43
Leather and leather products	6.19	6.58	6.58	6.55	230.89	247.41	254.65	246.28
Transportation and public utilities	12.32	12.49	12.47	12.60	490.34	490.86	493.81	507.78
Wholesale trade	9.95	10.28	10.30	10.41	381.09	389.61	392.43	398.70
Retail trade	6.28	6.49	6.48	6.48	188.40	186.91	189.22	193.75
Finance, insurance, and real estate	9.03	9.48	9.47	9.58	325.98	337.49	339.03	348.71
Services	8.80	9.30	9.26	9.33	290.40	301.32	302.80	308.82

1/ See footnote 1, table B-2.

p = preliminary.

Table B-4. Average hourly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry, seasonally adjusted

Industry	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989p/	July 1989p/	Percent change from: June 1989-July 1989
Total private2/:							
Current dollars	$9.31	$9.54	$9.61	$9.60	$9.62	$9.70	0.8
Constant (1977) dollars3/	4.84	4.80	4.80	4.77	4.77	N.A.	(4)
Construction	13.05	13.26	13.33	13.32	13.31	$13.41	8
Manufacturing	10.18	10.40	10.40	10.42	10.45	10.48	.3
Excluding overtime5/	9.72	9.92	9.92	9.97	9.99	10.01	.2
Transportation and public utilities	12.35	12.50	12.52	12.54	12.53	12.63	.8
Wholesale trade	9.98	10.21	10.36	10.28	10.32	10.45	1.3
Retail trade	6.32	6.47	6.51	6.49	6.51	6.53	.3
Finance, insurance, and real estate	9.11	9.36	9.54	9.45	9.52	9.67	1.6
Services	8.93	9.24	9.32	9.33	9.34	9.46	1.3

1/ See footnote 1, table B-2.

2/ Includes mining, not shown separately, because its seasonal component is too small to be separated out with sufficient precision.

3/ The Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) is used to deflate this series.

4/ Real earnings were unchanged from May to June 1989, the latest month available.

5/ Derived by assuming that overtime hours are paid at the rate of time and one-half.

N.A. = not available.

p = preliminary.

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

(1977=100)

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1988	May 1989	June 1989p/	July 1989p/	July 1988	Mar. 1989	Apr. 1989	May 1989	June 1989p/	July 1989p/
Total private	127.6	127.5	130.2	131.5	125.6	127.6	128.7	127.6	128.0	129.4
Goods-producing industries	102.4	102.6	104.6	103.8	102.0	102.9	103.5	102.4	102.5	103.2
Mining	83.5	81.2	82.0	81.8	83.5	81.1	83.4	81.8	81.4	81.7
Construction	150.7	141.8	148.2	156.4	137.9	140.3	141.0	138.2	139.2	143.0
Manufacturing	94.0	96.0	97.2	94.7	95.9	96.7	97.2	96.4	96.3	96.5
Durable goods	91.9	94.2	95.0	91.5	94.2	94.9	95.2	94.3	94.0	93.8
Lumber and wood products	107.3	104.4	107.7	104.7	104.5	105.3	105.9	103.7	103.4	102.1
Furniture and fixtures	107.5	110.9	111.8	106.7	112.9	114.3	114.6	112.9	112.3	111.7
Stone, clay, and glass products	92.2	91.5	93.1	91.8	90.0	90.5	91.0	89.3	90.0	89.8
Primary metal industries	66.5	68.1	68.9	66.4	68.5	68.9	68.6	68.2	68.5	68.2
Blast furnaces and basic steel products	54.5	52.9	53.7	52.0	54.5	53.6	52.4	52.3	52.5	51.3
Fabricated metal products	88.4	91.2	91.8	88.0	91.6	92.5	92.2	91.7	90.9	91.1
Machinery, except electrical	89.4	93.5	94.5	91.7	91.4	93.4	93.9	93.7	93.8	93.6
Electrical and electronic equipment	98.0	97.1	97.9	94.9	100.8	98.8	99.7	98.4	97.8	97.6
Transportation equipment	95.5	101.4	100.2	94.7	100.2	101.5	101.2	100.5	99.4	99.4
Motor vehicles and equipment	84.5	91.8	89.7	81.4	89.1	91.7	91.1	90.2	88.0	86.3
Instruments and related products	111.0	115.0	116.6	116.0	113.1	115.0	116.4	115.8	115.8	118.3
Miscellaneous manufacturing	81.9	86.1	87.2	80.0	85.7	86.1	87.1	86.6	86.2	83.9
Nondurable goods	97.1	98.5	100.6	99.3	98.4	99.5	100.1	99.5	99.8	100.5
Food and kindred products	102.9	99.7	104.4	109.1	100.7	102.9	103.8	103.3	104.2	107.0
Tobacco manufactures	68.6	64.5	63.3	56.7	77.0	69.6	73.0	69.6	66.9	62.7
Textile mill products	78.5	81.2	82.6	79.0	81.3	81.0	82.1	81.5	81.7	81.8
Apparel and other textile products	80.8	85.5	86.6	81.9	84.5	85.4	86.8	85.4	84.9	85.5
Paper and allied products	101.8	101.5	103.3	102.0	102.3	102.3	102.4	102.3	102.4	102.7
Printing and publishing	134.7	136.9	137.4	136.7	136.2	138.5	138.2	137.8	138.6	138.2
Chemicals and allied products	98.1	100.4	102.9	101.6	98.4	100.4	100.9	100.5	102.0	101.8
Petroleum and coal products	87.3	83.3	87.6	91.0	84.5	82.2	82.9	83.5	84.9	87.6
Rubber and misc. plastics products	114.9	119.7	120.0	115.5	118.6	119.9	119.9	119.6	118.8	119.0
Leather and leather products	52.4	54.9	57.1	52.6	54.9	56.1	56.0	54.7	55.5	54.9
Service-producing industries	141.5	141.4	144.4	146.8	138.7	141.2	142.6	141.5	142.2	143.9
Transportation and public utilities	114.9	116.7	118.8	120.4	113.7	116.2	118.6	117.3	117.4	119.3
Wholesale trade	124.7	126.3	127.9	128.6	123.3	126.4	127.2	126.1	126.6	127.1
Retail trade	130.4	126.7	130.1	132.8	126.5	126.9	127.7	127.2	127.4	128.9
Finance, insurance, and real estate	144.2	141.8	144.4	147.9	141.5	141.8	143.8	141.9	142.5	145.3
Services	165.7	167.8	171.3	173.9	162.4	167.3	168.9	167.5	168.9	170.8

1/ See footnote 1, table B-2.

p = preliminary.

Table B-6. Diffusion indexes of employment change, seasonally adjusted

(Percent)

Time span	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
	Private nonagricultural payrolls, 349 industries1/											
Over 1-month span:												
1987	55.6	59.3	61.0	61.9	58.6	59.7	65.3	60.6	63.0	67.8	64.5	60.7
1988	60.7	63.5	63.0	62.8	61.3	67.2	63.6	58.0	55.4	63.9	68.2	64.6
1989	68.3	60.5	61.0	58.2	55.6	p/57.7	p/57.4					
Over 3-month span:												
1987	60.7	62.0	66.6	65.2	65.8	65.9	67.8	71.1	71.2	72.3	70.9	65.9
1988	64.8	65.6	69.5	70.2	71.1	71.9	71.2	64.2	65.3	70.1	73.4	74.6
1989	71.6	70.1	64.5	61.9	p/61.3	p/59.9						
Over 6-month span:												
1987	67.3	65.8	64.8	66.8	67.6	69.5	71.3	73.5	73.2	71.5	71.8	72.2
1988	69.9	70.2	71.5	73.9	73.9	69.1	70.2	74.6	73.5	73.9	74.5	75.8
1989	75.1	69.5	p/68.2	p/63.3								
Over 12-month span:												
1987	66.6	68.2	68.2	71.8	71.9	72.5	72.2	74.1	75.4	72.5	73.8	76.9
1988	76.2	76.1	74.8	74.6	75.8	74.9	78.1	75.5	75.5	74.8	74.9	p/74.2
1989	p/71.5											
	Manufacturing payrolls, 143 industries1/											
Over 1-month span:												
1987	44.3	53.9	54.3	55.7	55.3	54.3	62.8	59.9	63.8	59.9	65.6	56.4
1988	58.5	56.0	55.0	59.9	58.5	61.7	59.6	51.1	49.3	62.8	64.9	58.5
1989	62.4	53.5	53.2	49.6	46.8	p/48.2	p/50.7					
Over 3-month span:												
1987	52.1	51.4	59.6	61.3	58.5	62.8	67.0	71.6	68.4	70.6	67.7	64.5
1988	63.1	61.0	62.4	64.9	67.4	67.0	64.5	58.2	62.1	66.7	71.3	70.9
1989	67.4	63.8	55.7	51.8	p/48.6	p/47.5						
Over 6-month span:												
1987	57.4	56.7	55.3	62.4	64.9	67.0	67.4	70.6	71.3	69.5	69.5	68.1
1988	66.3	66.3	67.7	69.5	66.7	64.2	66.0	70.9	68.8	69.9	71.6	74.1
1989	69.5	58.5	p/55.7	p/49.6								
Over 12-month span:												
1987	55.3	58.5	58.5	63.5	66.3	67.4	71.6	72.7	71.6	69.1	68.4	72.3
1988	73.8	70.2	70.9	71.6	72.0	69.9	70.9	69.1	71.6	70.2	69.9	p/67.4
1989	p/61.3											

1/ Based on seasonally adjusted data for 1-, 3-, and 6-month spans and unadjusted data for the 12-month span. Data are centered within the span.
p=preliminary.
NOTE: Figures are the percent of industries with employment increasing plus one- half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing employment.

Representative **Hamilton**. Thank you very much. You might comment, to begin with, on the statistic I mentioned in the opening statement about the unusually large increase in the average weekly hours in the private economy. That would normally be a sign of strength, I presume, in the labor market. How do you explain that figure? Is it consistent with the others?

Mrs. **Norwood**. It is back to where it was a few months ago in April. Hours at work have been fairly high regularly and I would not put particular emphasis on this month's figures.

Representative **Hamilton**. Payroll growth was around 200,000 in the private sector. Does that represent a significant slowing in the economy?

Mrs. **Norwood**. It is clearly a slowing; it's not down, it's still growth, and it's significant growth, but it is certainly less than we had last year. And most of it, of course, is in services; manufacturing is really quite flat, if not down.

Representative **Hamilton**. If you look at the payroll employment figures for the major sectors of the economy, do you see any unusual signs of strength or weakness in any of the sectors?

Mrs. **Norwood**. Construction added jobs this month, but that followed several months of poor performance, so I wouldn't put much emphasis on that. Mining is not doing well. Manufacturing, I think, particularly durable manufacturing has been losing jobs over the last several months. We now have an economy, however, where most of the workers are in service-producing industries, and these industries showed moderate job growth over the month. The services industry, itself, increased jobs in July, particularly in health services; transportation also did quite well this month.

And so I think that if we had been talking about this set of data 20 years ago, the situation would have been much worse because so many more people would have been working in manufacturing.

Representative **Hamilton**. And on the inflation figures for June, do they suggest that inflation is now under control or are there special factors which held down the inflation rate during that period?

Mrs. **Norwood**. We had very strong price increases in the first 5 months of the year. There seem to be some indications of moderation for the second half of the year, in particular in energy and food prices which were the culprits in the first part of the year. So, the outlook for prices looks better for the second part of the year than it did for the first.

Representative **Hamilton**. The announcement this week by the major automobile companies that they're going to increase prices of their new models, how will that impact the inflation statistics?

Mrs. **Norwood**. It's going to give us a great deal of trouble because it's going to throw the seasonal adjustment process into difficulty since the timing of this is somewhat different than usual.

Mr. Dalton can explain that more fully.

Representative **Hamilton**. Mr. Dalton.

Mrs. **Norwood**. He has to deal with it.

Mr. **Dalton**. I think a lot depends on what happens to automobile prices on the current models at the end of the model year. And a lot depends on what sorts of quality adjustments we'll be making for the 1990 models. As you may know, we do make quality adjustments to reflect improvements in automobiles. In the absence of any quality adjustments, nominal price increases will show up as price increases in the CPI.

Representative Hamilton. The price increases announced were roughly between 5 and 10 percent for two of the big automobile companies, Ford and Chrysler—I don't know what GM is doing, but in those two companies they've had announced increases—could that reasonably be expected to show in the inflation statistics? How big a blip would that be?

Mr. Dalton. It's very hard to estimate how big a blip it would be for a number of reasons. The first is how much of that price increase can be associated with an improvement in the quality of the new model?

And second, how strong or weak consumer demand will be for those models. I mean, there is evidence now that demand is rather weak, and whether or not those price increases will find their way through to the final consumer is a difficult question to answer.

Representative Hamilton. And before turning to——

Mrs. Norwood. The other question, if I may add, is that manufacturers usually provide fairly steep discounts to dealers at the end of the model year and there seems to be some evidence that they are changing the timing of those discounts and that could affect the index and the seasonal adjustment process.

Representative Hamilton. OK.

The other thing I wanted to ask before turning to my colleagues is about the sharp drop in the unemployment rate for black teenagers. That fell 10 points in July. Was that decline significant or was this anticipated?

You mentioned in your statement how these figures jump around quite a bit.

Mrs. Norwood. Yes, that change is statistically significant. The black teenage rate has to move almost 6 percentage points and it was more than that——

Representative Hamilton. Why do you think that came about, that kind of a drop?

Mrs. Norwood. I'd like to think that it is because these young people are getting jobs in the summertime and I'm sure that some of them are. However, we need to be a little careful about the figure because it could bounce up again—for example, in the month of April the rate was 30.8 percent and then it jumped up in June to 36.5 percent. So the black teenage rate goes up and down quite a bit. But the decline in July is a statistically significant drop.

Representative Hamilton. Congresswoman Snowe.

Representative Snowe. Thank you, Mr. Chairman.

Mrs. Norwood, I noted in your testimony of last month that you said factory employment had declined by 50,000 over the past 3 months. How do you compare that with what you've said in your testimony today, in which it has apparently stabilized? Is that a positive sign?

Mrs. Norwood. I do believe that durable manufacturing is showing some evidence of difficulty; in part, because of the automobile industry. But it seems to be a little bit more widespread than that.

And the situation in automobiles, of course, is a different kind of problem. I think there is a supply-and-demand problem; there's an oversupply of cars and the demographics suggest that the automobile companies are going to have to be cutting back some.

Representative SNOWE. In talking about the automobile losses for, I guess, the second straight month, how do they compare with previous losses in the automobile industry at any other period of time?

Mrs. NORWOOD. We have had periods where the automobile companies have closed down for short periods of time for changing over to new models. I think that now we're in a somewhat different situation because there has been for several months an oversupply of automobiles and there are, of course, a lot of ways of handling that but the automobile companies handle it generally by reducing production.

Jack Bregger has something more to say.

Mr. BREGGER. In the past we've had some tremendous declines in auto manufacturing employment, particularly from the late seventies to the early eighties when there were the two recessions. So from a peak of just over a million in January 1979, we saw employment go down by about 400,000 by late 1982. And that was a very substantial decline.

Since then auto employment has gone back up by a little over 200,000, but it does not appear to be recovering anywhere near the high levels we had in the late seventies.

Mrs. NORWOOD. And it's partly, I think, because we are seeing somewhat more efficiency in the plant and equipment that we're using.

Representative SNOWE. In my own State, two electrical plants closed down in the last few months, one very recently. And I also notice in your statement that you mention that the job losses and closures have accelerated over the last 6 to 8 months.

Can you elaborate on that? Is there a trend? What's happening in that area?

Mr. BREGGER. In the last 3 months employment in electrical equipment has gone down about 25,000. It has actually been trending downward since November. Before that, it was rising for about a year and a half, but more recently we've had a clear downtrend of over 6 months.

Mrs. NORWOOD. It's rather interesting that employment in that industry declined a lot during the 1981-82 recession, then went up fast, peaking in early 1985. Since then it has been coming down pretty steadily.

Representative SNOWE. What about job growth in the service industries? That's where a major proportion of our job growth has resulted. And now you mentioned in your testimony that it is moderating.

Mrs. NORWOOD. In some of the service industries. It's continuing, of course, to grow quite a lot in health services and in business services—75,000 job growth is quite a lot in the services industry itself, especially when you consider that this increase followed a 200,000 growth in jobs last month. It is slower than we had been having, it's more moderate, but it is still considerable growth.

Retail trade is beginning to slow down more, but transportation continues to do fairly well.

The two important industries in terms of size of employment and numbers of jobs are retail trade and the services industry itself. And the services industry itself is really still doing quite well, though somewhat less than it had been at the beginning of last year.

Representative SNOWE. Is there anything else that's troubling about the fact that job growth in the services industry is moderating?

Mrs. NORWOOD. I think it's what we had been expecting generally. I think there are some who expected it to have moderated much more than it has.

Representative SNOWE. One other point that I'd like to raise as far as your testimony is concerned is that the jobless rate for adult women has edged up steadily. Do you have any reasons for that at this point?

Mrs. NORWOOD. The jobless rate for adult women has historically, as you know, always been much higher than the rate for men, in good times as well as bad. That situation turned around in the early eighties. During the 1981-82 recession, the unemployment rate for men went way up, since the durable industries which were most severely affected by the recession have mostly a male labor force. The unemployment rate for women did not rise quite so sharply because the service-producing sector fared better than the goods-producing sector during the recession.

So it looked for quite a while as though, once those rates met, that they were going to stay about the same. We're now, over the last several months, seeing the reappearance of the old historical pattern of women having a higher employment rate than men. I don't know whether that will continue, but it's certainly there now. And it is different.

Representative SNOWE. And we don't know exactly why?

Mrs. NORWOOD. No.

Representative SNOWE. Or what areas, what jobs?

Mrs. NORWOOD. Not really.

Representative SNOWE. Do we know the national rate of unemployment is for women? Is there such a rate?

Mrs. NORWOOD. Well the unemployment rate for adult women 20 and over is 5 percent and for men, adult men, it's 4.3 percent.

The rate for teenagers, the young women—teenage women, usually have a higher unemployment rate than the men. Do we have that?

It's 13.4 percent—that's the rate for teenage men.

And the rate for teenage women is 16 percent. So there's nearly three points difference there.

Representative SNOWE. Thank you.

Representative HAMILTON. Congressman Solarz.

Representative SOLARZ. Thank you very much, Mr. Chairman.

Mrs. Norwood, it's good to see you again.

Unemployment is now 5.2 percent?

Mrs. NORWOOD. Yes.

Representative SOLARZ. Are there any other major industrial nations that have a lower unemployment rate?

Mrs. NORWOOD. Yes, Japan.

Representative SOLARZ. What is it?

Mrs. NORWOOD. The Japanese unemployment rate is about 2.5, 2.4 percent.

Representative SOLARZ. Any other country?

Mrs. NORWOOD. Scandinavian countries.

Representative SOLARZ. What are they?

Mrs. NORWOOD. Well Sweden is about 1 percent, a little more than 1 percent. But most of the others that we measure on a comparable basis are higher than ours.

Representative SOLARZ. Is there any reason why we couldn't have a 2.5-percent unemployment rate like Japan or a 1-percent unemployment rate like Sweden?

Mrs. NORWOOD. If we did the kinds of things with the economy that the Swedes do, I suppose we could.

Representative SOLARZ. What do they do that makes it possible for them to have 1 percent unemployment, presumably without a serious problem with inflation, that we are not doing?

Mrs. NORWOOD. The whole governmental system is very different and the social system is different, the child care facilities are totally different and so you have very high labor force participation rates for women. It's just a totally different system.

And in the case of Japan, that's a different situation. In Japan there are a lot of people who retire quite early, even though they might want to continue working. But, they're not looking for work, so according to our labor force concept they're not counted as unemployed. But if you counted all the discouraged workers in Japan—or what we define as discouraged workers—and the discouraged workers in the United States, the rates would be much closer.

Representative SOLARZ. Could you try to elaborate a little bit on the difference between the Swedish system and ours? Basically what you said was that they have a 1-percent unemployment rate because they have a different system. You've alluded to day care facilities; is that the primary explanation, that any woman who has young children who wants to work in Sweden can work because there's a place for her to put her children during the day?

Mrs. NORWOOD. Well that's an important—in my view, that's an extremely important element. And I believe that the labor force participation rates for women could increase a great deal more if we had different kinds of approaches to child care.

But quite apart from that——

Senator SARBANES. Why would a measure that would affect labor force participation be responsive to a question about a low unemployment rate?

Mrs. NORWOOD. The other side of that, you're quite right, is the government approach, the governmental approach to the creation of jobs in Sweden. Now I'm not an expert on the Swedish economy——

Senator SARBANES. I understand. We did a symposium——

Mrs. NORWOOD. I know, I was there. It was quite fascinating.

Representative SOLARZ. I don't want to——

Mrs. NORWOOD. I'll be glad to submit something for the record.

Representative SOLARZ [continuing]. Put you in an awkward position now, but I am intrigued by this and it may be that they pursue policies that we would deem either politically unacceptable or substantively unsound or too expensive or incompatible with the American work ethic.

But if in fact it's a reflection of their system that they can have 1 percent unemployment without high inflation, we ought to have a better sense of what it is about their system; it might possibly be something worth emulating or looking at.

But could you give us an analysis of that and also in the case of Japan?

Mrs. NORWOOD. Yes.[1]

Representative SOLARZ. Given our system as it is, do you see any real possibility that the 5.2 percent unemployment rate could be significantly diminished? Could it go down to 4 percent or 3 percent?

Mrs. NORWOOD. Sure, it could.

Representative SOLARZ. What would have to happen?

Mrs. NORWOOD. First of all, there are a number of things that are working in our favor. We have many fewer young people. Young people have very high unemployment rates, so the fact that there are fewer younger people brings some downward pressure on the aggregate unemployment rate.

Certain groups of the population still have very high unemployment rates. If we brought those unemployment rates down—and there are programs certainly underway to do that—obviously the effect on the aggregate unemployment rate would be a downward pull. So it is certainly possible.

Representative SOLARZ. Could you perhaps elaborate for the record on what kinds of programs or policies would be necessary to significantly reduce the unemployment rate among those sectors of the population that have high unemployment rates?

Mrs. NORWOOD. I can certainly identify the areas. I will not indicate what policies should be developed.[1]

Representative SOLARZ. What can you tell us about the relative rates of poverty in the United States compared to the other major industrial democracies? Do you know what they are in other countries?

Mrs. NORWOOD. No, I don't. I can tell you that I think it is extremely difficult to compare. Poverty, in my view, is relative, relative to the standard of living of the whole population. And the measurement of poverty in the United States and other countries certainly leaves something to be desired in terms of a common concept. But we'll look into that and see what we can provide.

Representative SOLARZ. Could you give us your best shot at it? Is it also possible to get any figures on such comparative indicia of social disintegration as single-parent families and the number of single-parent families or children born out of wedlock here compared to these other countries?

Mrs. NORWOOD. Yes, there has been some international comparisons of that. We'll look at it.

Representative SOLARZ. Could you get us that as well?

Mrs. NORWOOD. Yes.[1]

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[1] See letter of response, together with enclosures, dated Sept. 1, 1989, beginning on p. 80.

Representative SOLARZ. Now, I notice you had an interesting chart here on the dropout figures in high school. There seems to have been a rather significant decline over the last decade in the total number of high school dropouts. But it's not clear whether that decline in the absolute number of dropouts reflects a decline in the percentage of young people entering high school who drop out. Do you know whether there has also been a decline in the percentage of high school students who drop out?

Mrs. NORWOOD. We expect that it would be, but we'll supply that for the record.[1]

Representative SOLARZ. And do you have any thoughts about why this is happening? This seems to be a salutary trend, it's nice to hear you bring good news about an issue that's been of some concern to many of us.

Mrs. NORWOOD. I certainly hope that it suggests that there's an improvement in the situation for young blacks particularly. It's small; I'd like to see that number drop much more, but it is certainly encouraging.

Representative SOLARZ. Well it depends, I suppose, on your base year. If I look at your chart, in 1986 there were 90,000 blacks who dropped out of high school. Then in 1988, 107,000, so that would seem like an increase—although 107,000 is less than in 1987, which is 115,000.

Mrs. NORWOOD. It's considerably less than it was in 1975, which is roughly over the decade.

Representative SOLARZ. If you could perhaps give us any thought you have about what might be responsible for this.

Mrs. NORWOOD. Certainly.[1]

Representative SOLARZ. Finally, what percentage of our work force is in the service industries?

Mrs. NORWOOD. It's nearly 8 out of every 10, it's about——

Representative SOLARZ. Eighty percent?

Mrs. NORWOOD. It's not quite 80 percent, it's about 78 percent—nonfarm, without agriculture——

Representative SOLARZ. But nonfarm includes manufacturing?

Mrs. NORWOOD. Yes.

Representative SOLARZ. And so what percent are in services?

Mrs. NORWOOD. Services—the service-producing sector?

Representative SOLARZ. Yes, as opposed to manufacturing.

Mrs. NORWOOD. The service-producing sector of the economy represents about 78 percent of total nonagricultural employment.

Representative SOLARZ. And how does that compare to the other industrial countries?

Mrs. NORWOOD. They are changing in the same direction that we are, most of them, but we can look at the exact numbers and provide that for the record.[1]

Representative SOLARZ. If I recall correctly in one of our previous hearings you indicated that manufacturing as a percentage of GNP was more or less constant over the last decade or so?

Mrs. NORWOOD. Manufacturing production but not employment.

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[1] See letter of response, together with enclosures, dated Sept. 1, 1989, beginning on p. 80.

Representative **Solarz**. Production.

Mrs. **Norwood**. Yes, because productivity in manufacturing has been fairly significant in the last several years; 76 percent—is that right, Mr. Bregger?

Mr. **Bregger**. I just calculated the service-producing share of employment.

Mrs. **Norwood**. 76 percent.

Representative **Solarz**. Thank you very much, Mr. Chairman. What was that, Mrs. Norwood? I didn't hear your last observation.

Mrs. **Norwood**. My last observation was I thought it was 78 percent but if Mr. Bregger says it's 76 percent that's what it is. [Laughter.]

Representative **Solarz**. Thank you very much.

[The following information was subsequently supplied for the record:]

U. S. Department of Labor

Commissioner for
Bureau of Labor Statistics
Washington, D.C. 20212

SEP 1 1989

Honorable Stephen J. Solarz
House of Representatives
Washington, D.C. 20515

Dear Congressman Solarz:

I am writing in response to the questions you raised at the August 4 Joint Economic Committee hearing. Four of your questions dealt with comparisons of U.S. labor market measures with those of other industrialized countries, and I will address those issues first.

You asked whether we have any information on international comparisons of poverty. The Bureau has not carried out any studies in this area. Although other countries prepare national poverty statistics, the definitions and methods vary greatly from country to country. There is also considerable diversity in conceptual approach. Therefore, we cannot simply make international comparisons based on the national statistics. The recently initiated Luxembourg Income Study (LIS) project, which permits meaningful comparisons of relative economic position across countries, does provide useful insights. The LIS is an international data bank of income statistics which have been placed on a common conceptual framework in order to achieve the best possible comparability. The United States, Canada, Australia, Israel, and five European countries participate in the LIS project.

A recent study published by the Urban Institute includes a chapter entitled Patterns of Income and Poverty which presents international comparisons of poverty rates based on data from the LIS file. I have enclosed a copy of this chapter. Table 5.2 on page 96 shows relative and absolute poverty rates among children, adults, and the elderly in eight LIS countries (excluding Israel). Overall poverty rates are also shown.

You also inquired about single-parent families and children born out of wedlock. I am enclosing a table from a book by Sheila B. Kamerman and Alfred J. Kahn entitled Mothers Alone. The table shows figures on single-parent families as a percent of all families with children for 10 foreign countries and the United States. In addition, my staff has prepared the enclosed table 1 on illegitimate live births as a percent of total live births for selected years from 1960 to 1986. Nine European countries and the United States are covered.

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During the hearing, you asked me about the proportion of Americans working in the service-producing sector, and we cited a current figure of 76 percent, based on the establishment survey of employees on nonagricultural payrolls. For international comparisons, it is preferable to derive the data from labor force surveys in the various countries, because such surveys provide more comparable data than establishment surveys. Labor force surveys cover employment in agriculture and also include self-employed persons and unpaid family workers as well as employees. Therefore, they give a more comprehensive count of employment.

The enclosed table 2 shows the proportion of total employment that is in the service-producing sector for 10 countries in 1988, based on data adjusted to U.S. concepts. The table shows service sector employment both as a proportion of total civilian employment and as a proportion of nonagricultural employment. Because of the differences in coverage noted above, the U.S. proportions are somewhat lower than the 76 percent derived from the establishment survey. On a total civilian employment basis, the U.S. proportion of employment in the service sector is higher than in any other country. However, on a nonagricultural employment basis, Canada and Australia move slightly ahead of the United States, and the other countries (except for the United Kingdom) move closer to the U.S. proportion. This results from the fact that all the other countries except the United Kingdom have proportionally larger agricultural employment than the United States.

I would like to provide some further explanation of the relatively low unemployment rates in Sweden and Japan. Labor market programs, such as public relief work, vocational training, special schemes for youth, and sheltered workshops are used extensively in Sweden to provide jobs to people who would otherwise be unemployed. The number of persons enrolled in the Swedish labor market programs varies with the business cycle, but it has exceeded the number of unemployed for more than a decade. The enclosed table 3 shows the size of these programs in 1987 and the first half of 1987 and 1988. If people in the Swedish programs had been classified as unemployed, the Swedish unemployment rate would have been 5 percent rather than 1.6 percent in the first half of 1988, drawing much closer to U.S. level.

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The Bureau has published several detailed analyses of Japan's low unemployment rate. Two of these studies, from the March 1984 and June 1989 issues of the Monthly Labor Review, are enclosed. I invite your attention to pages 25-26 in the March 1984 issue where we discuss some of the reasons for Japan's low jobless rates. In addition, we have prepared "expanded" unemployment comparisons for Japan and the United States based on the Bureau's U-1 to U-7 framework of alternative unemployment measures. (See page 26 of the March 1984 article.) The U-6 and U-7 measures bring into consideration two groups of persons who bear the brunt of economic downturns in Japan: persons on reduced work hours and discouraged workers. These forms of underutilization, of course, do not show up in the conventional unemployment rate. When unemployment measures are expanded to include these persons, the adjusted Japanese unemployment rate draws much closer to the comparable U.S. rate and probably has even exceeded the U.S. rate in recent years. (It is not possible to measure discouraged workers in Japan in exactly the same way as they are measured in the United States.) Our most recent U-6 and U-7 comparisons appear in table 4 of the June 1989 article.

You also raised questions concerning trends and recent developments in the U.S. labor market. As you know, the U.S. economy has experienced sharp employment growth and substantial improvements in most measures of labor market performance during the past 6-1/2 years. There are, however, several million persons who have not fully shared in this improvement. Six and a half million persons were unemployed in July, about a million and a half of whom had been jobless for 15 weeks or more. During the second quarter of this year, about 5 million workers were employed part time even though they wanted a full-time job, and nearly 900,000 persons wanted a job but were not looking for work at all because they were discouraged about their job prospects.

School dropouts, young single parents, persons living in depressed areas, and minority group members have the greatest likelihood of being affected by labor market problems. Black workers are more than twice as likely to be unemployed than are whites, and, despite recent improvements, more than 1 out of 4 black teenage workers were unemployed in July. The enclosed table 4 presents comparisons for the second quarter of this year for several of these categories.

SEP 1[illegible] 1989

Table 5 shows high school graduation trends for the past two decades. The twentieth century has seen a dramatic increase in the educational level of the U.S. population. At the beginning of the century, only about 10 percent of male students received a high school diploma. As shown in the table, by 1967, three-quarters of all young persons of post-high school age were high school graduates. Since then, high school completion rates have increased further, but at a clearly diminishing rate. In fact, there has been little improvement since the mid-1970's, with the dropout rate remaining near 20 percent.

I hope that this information satisfactorily answers your questions.

Sincerely yours,

JANET L. NORWOOD
Commissioner

Enclosures

cc: Bill Buechner - JEC

Table 1. Illegitimate Live Births as a Percentage of All Live Births in 10 Countries, Selected Years 1960-1986

Country	Illegitimate live births as a percent of all live births				Percent change, 1960-86	
	1960	1970	1980	1986	All live births	Illegitimate births
United States	5.3	10.7	18.4	23.4	-12	292
Belgium	2.1	2.8	4.1	(1) 6.3	-25	(1) 127
Denmark	7.8	11.0	33.2	43.9	-27	308
France	6.1	6.8	11.4	21.9	- 5	243
Germany	6.3	5.5	7.6	9.6	-55	- 2
Ireland	1.6	2.7	5.0	9.6	1	507
Italy	2.4	2.2	4.3	5.6	-39	41
Netherlands	1.3	2.1	4.1	8.8	-23	403
Sweden	11.3	18.4	39.7	48.4	0	329
United Kingdom	5.2	8.0	11.5	21.0	-18	231

(1) Data for 1984; percent change 1960-84.

Sources: U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1980 and 1989 editions; Statistical Office of the European Communities, Demographic Statistics 1988; Statistics Sweden, Statistical Abstract of Sweden, 1967, 1977 and 1989 editions.

Prepared by: U.S. Department of Labor, Bureau of Labor Statistics, August 1989.

Table 2. Employment in Services as a percent of Total Civilian Employment and Non-Agricultural Employment, 10 Countries, 1988

Country	Services employment as a percent of:	
	Total civilian employment	Non-agricultural employment
United States	71.3	73.4
Canada	70.9	74.2
Australia	69.4	73.7
Japan	58.5	63.3
France	(1) 63.1	(1) 67.9
Germany	(2) 55.7	(2) 58.6
Italy	57.8	64.0
Netherlands	(3) 69.3	(3) 72.8
Sweden	67.3	70.3
United Kingdom	(2) 69.7	(2) 71.3

(1) 1987.
(2) Preliminary.
(3) 1986.

Source: U.S. Department of Labor, Bureau of Labor Statistics, Comparative Labor Force Statistics for Ten Countries, 1959-1988 (June 1989 edition).

Table 3. Sweden: Unemployment and Job Creation Measures, 1987 and 1988

(in thousands, except where percent)

	1987	1987 Jan-June	1988 Jan-June
Unemployed	84.1	85.3	73.0
Job Creation Measures	151.7	159.4	155.2
Occupational training	35.9	37.0	43.1
Relief work	16.7	20.1	17.2
Sheltered employment	76.2	76.4	77.3
Youth teams	17.9	20.4	12.6
Recruitment support	5.0	5.5	5.0
Unemployment rate:			
Adjusted to U.S. concepts	1.9	1.9	1.6
Including persons in job creation measures	5.2	5.4	5.0

Source: The Swedish Economy, Autumn 1988 (Stockholm, National Institute of Economic Research).

Prepared by: U.S. Department of Labor, Bureau of Labor Statistics, August 1989.

Table 4. Labor force status of persons 16 years old and over, second quarter, 1989, not seasonally adjusted

(Numbers in thousands)

Characteristic	Total	Black	Hispanic origin	Percent black and Hispanic of total
Civilian labor force.....	123,780	13,415	9,316	18.4
Employed................	117,368	11,868	8,571	17.4
Part time for economic reasons................	4,940	833	609	29.2
Unemployed.	6,412	1,547	745	35.7
Unemployed 15 weeks or more................	1,443	372	130	34.8
Discouraged workers......	798	274	93	46.0
Labor force participation rate...................	66.5	63.9	67.8	--
Employment-population ratio..................	63.0	56.6	62.4	--
Unemployment rate........	5.2	11.5	8.0	--
Teenage unemployment rate..................	15.9	35.6	22.2	--

SOURCE : Current Population Survey

Prepared by: U.S. Department of Labor
Bureau of Labor Statistics
August 1989

Table 5. Proportion of persons 18 to 24 years old who have completed high school,[1] October 1967 to 1988

Year	Percent high school graduates
1967	75.5
1968	76.3
1969	78.2
1970	78.8
1971	79.0
1972	79.8
1973	80.7
1974	80.7
1975	80.8
1976	80.5
1977	80.5
1978	80.7
1979	80.1
1980	80.9
1981	80.6
1982	80.7
1983	80.4
1984	81.6
1985	82.4
1986	82.1
1987	81.4
1988	81.2

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[1] Persons who have received high school equivalency degrees are counted as high school graduates.

SOURCE : Current Population Survey

Prepared by: U.S. Department of Labor
Bureau of Labor Statistics
August 1989

The Vulnerable

The Changing Domestic Priorities Series

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Chapter Five

PATTERNS OF INCOME AND POVERTY: THE ECONOMIC STATUS OF CHILDREN AND THE ELDERLY IN EIGHT COUNTRIES

Timothy Smeeding, Barbara Boyle Torrey, and Martin Rein

The two major dependent groups in industrial countries, the young and the elderly, put the greatest demand on public resources and in turn receive most of public income transfers and services. The economic status of these two groups is therefore of particular concern for policymakers.

In the United States the economic status of the young and old changed dramatically between 1970 and 1986 (U.S. Bureau of the Census 1987). Chapters 3 and 4 of this volume have discussed in some detail how these changes occurred and what their effects were on groups within the young and the elderly. One indication of the economic change was the fall in poverty rates of the elderly as the rates for children increased. The first trend was welcomed; the second has become an increasing concern.

This reversal in the economic status of the young and the elderly in the United States occurred without an explicit policy to favor one group over the other. Rather, the reversal was the result of an accumulation of policy decisions interacting with social changes. It was not anticipated at the beginning of the 1970s and not carefully documented until the 1980s (Preston 1984).

One of the many issues raised by the changing fortunes of the young and elderly in the United States is whether this is an inevitable trend in aging societies. As the old become a larger proportion of a society, do they gain more influence and demand a disproportionate share of social resources? If this is an inevitable trend in aging

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democratic societies, we might expect to see similar trends in other industrial countries. If, however, the elderly in other countries do not enjoy such an obvious economic advantage relative to children, then the reversal in the fortunes of the two groups in the United States may be caused by social policies and attitudes unique to this country.

Comparable income trend data by age are difficult to find for other countries, but roughly comparable data for the 1970–84 period for Canada and the United Kingdom show trends similar to those in the United States. The incomes of the elderly increased faster than the incomes of the general population in all three countries, but especially in the United States where overall real incomes did not increase. The real incomes of single-parent families with children either increased more slowly (Canada) or fell (the United Kingdom and the United States) in real terms over the 1970–84 period.

International income comparisons in the past have been limited by the lack of comparable data for pre- and posttax/posttransfer income and for the demographic unit. Comparable income and demographic data did not exist for most countries until the Luxembourg Income Study (LIS) reported its first results at a conference in the summer of 1985. This study has created comparable cross-sectional income data files for several Western industrial countries plus the United States. As a consequence, LIS data offer the first clear economic window through which to compare industrial societies and learn the lessons such comparisons can teach.

These comparisons of the United States with seven other countries—Australia, Canada, Norway, Sweden, Switzerland, the United Kingdom and West Germany—suggest that the relative economic advantage of the elderly in the United States over the young is shared by Canada and Sweden, but in both those countries the rates of poverty for children are much lower than the rate in the United States. Four other countries (Norway, Switzerland, the United Kingdom and West Germany) have considerably higher poverty rates for the elderly than the young; in Australia the poverty rates of the two groups are similar.

These comparisons reinforce concerns about the economic status of American children. In 1979, the year of the U.S. survey examined in detail in this chapter, the poverty rate for children was only slightly higher than the rate for the elderly. The most recent official U.S. poverty rate estimates (1986) are 19.8 percent for children and 12.4 percent for the elderly (U.S. Bureau of the Census 1987), thus the child poverty rate is nearly 60 percent higher than the elderly rate. The international comparisons in this chapter suggest not only that children are at a disadvantage relative to the elderly in the United States, but also that American children have considerably higher poverty rates than the children in all the other countries examined except Australia.

After introducing the reader to LIS, this chapter examines in detail the income level and inequalities among the young and the elderly in eight countries in the 1979–81 period. It then compares the low-income and poverty levels of each group within and among countries and discusses the social, demographic, and economic factors that help to explain the differences among countries.

LUXEMBOURG INCOME STUDY DATA FILE

Between 1979 and 1982, nine countries conducted national household surveys that collected detailed income data. The data from these nine surveys were adjusted for definitional differences in income and income-sharing units and have become the core of the LIS data set. The LIS data base includes nine countries, the eight included in this paper and Israel. Israel is excluded from the comparisons discussed here because its too idiosyncratic to yield much insight into comparative trends across countries. Each survey covers at least 92 percent of the noninstitutionalized population (97 percent excluding Switzerland and West Germany).[1] Although for some ethnic groups, such as Laps in Norway or Aleuts in the United States, the sample sizes are too small to be representative, the age groups that are the major concern in this chapter are well represented.

Family disposable personal income (posttax-posttransfer income) is the main measure of well-being used throughout this chapter. It includes all forms of cash income (earnings, property income, all cash transfers) net of direct taxes (that is, employer and employee payroll taxes and income taxes). In some cases we also use gross income (disposable income plus income and payroll taxes); pretax-pretransfer income (gross income minus public transfers); and posttax-pretransfer income (disposable income minus public transfers). Disposable income is also often adjusted for differences in family size and composition. Adjusted income is calculated by dividing disposable income by the equivalence scale appropriate to each family size and age composition. The equivalence scale is normalized to a family of three persons. A number of different equivalence scales have been used on the LIS data. For simplicity, this chapter uses the equivalence scale inherent in the U.S. poverty rate calculation. (For a more thorough discussion of the range of equivalence scales and the effect the U.S. poverty line equivalence scale has on the measurement of economic status, see Smeeding, Schmaus, and Allegreza 1985.)

The income accounting unit used in this chapter is that of the U.S. Census family (all persons living together and related by blood, marriage, or adoption). Families are also classified according to the age of the head of the family. For instance, elderly families are those headed by a person age 65 or older. Some small differences exist across LIS countries with respect to family definitions (see Smeeding, Schmaus, and Allegreza 1985, for details).

The Average Incomes of the Young and the Elderly in Eight Countries

Economic comparisons of different groups within a country require a standard measure. The national average adjusted (disposable) income for all families in each country is used as the standard for intracountry comparisons in this section. Because we are specifically interested in the economic comparisons of families with children and the elderly, we have excluded economic comparisons of nonaged families without children. In all cases the average income of the nonaged, childless family was higher than that for families with children, although for many age groups the differences were slight.

For the eight countries taken together, the overall mean income of families with children is 0.93 of the national average as compared with 0.89 for the elderly (table 5.1). In Canada and West Germany the overall adjusted incomes of elderly families and families with children are about equal. In Australia, the Scandinavian countries, and the United Kingdom, families with children have higher adjusted mean incomes than do elderly families. Only in Switzerland and the United States do we find that elderly families are better off on average than are families with children. In Switzerland adjusted incomes of elderly families are above the incomes of all families with children whose family heads are age 44 or younger. In the United States the adjusted incomes of the very old (those in families with heads age 75 and over) are only higher than those of much younger (heads age 34 or under) families with children. In Australia, Canada, and West Germany, the adjusted mean incomes of very old families are only higher than the incomes of the very youngest group of families with children (heads age 24 or under). In general, adjusted

Table 5.1 RATIO OF ADJUSTED DISPOSABLE INCOME TO NATIONAL MEAN FOR FAMILIES WITH CHILDREN AND ELDERLY FAMILIES, EIGHT COUNTRIES

Country	Families with children: age of family head						Elderly families		
	<25 years	25–34 years	35–44 years	45–54 years	55–64 years	Total	65–74 years	75 years and older	Total
Australia (1981[a])	0.68	0.80	0.89	1.07	1.05	0.90	0.88	0.80	0.85
Canada (1981)	0.65	0.84	0.93	1.02	0.96	0.91	0.94	0.81	0.90
Germany, F.R. (1981)	0.62	0.79	0.89	0.86	0.96	0.86	0.85	0.79	0.84
Norway (1979)	0.80	0.93	0.99	1.03	1.15	0.99	1.01	0.79	0.91
Sweden (1982)	0.91	0.98	1.01	1.09	1.01	1.01	0.96	0.78	0.90
Switzerland (1982)	0.60	0.77	0.89	0.98	1.16	0.91	1.11	0.91	1.02
United Kingdom (1979)	0.80	0.87	0.95	1.10	1.14	0.95	0.76	0.67	0.73
United States (1979)	0.62	0.82	0.93	1.02	0.94	0.90	0.99	0.84	0.94
Overall mean[b]	0.71	0.85	0.94	1.02	1.05	0.93	0.94	0.80	0.89

Source: Computations by authors from the Luxembourg Income Study Data File (1987).

Note: Disposable income is posttax and transfer income. Disposable income is adjusted for family size by dividing actual disposable income by the U.S. poverty line equivalence scale in table A-3. The national mean adjusted income equals 1.00. Families with children are those headed by persons ages 24–64 that include at least one child under age 18. Elderly families are those headed by a person age 65 or older. In some countries a small number of elderly families may include children under age 18.

< less than > greater than.

a. Year for which data are supplied.

b. The overall mean is the simple unweighted average of the means within each age group.

disposable income relative to the national mean of families with children is highest for those with heads ages 45 to 64. In Norway, Switzerland, the United Kingdom, and West Germany, the income of the families with heads ages 55 to 64 years with children is higher than in the 45- to 54-year-old group. Because several members of this group may already be retired, the incomes of those still working are even higher, relative to those ages 45 to 54, than these figures suggest. As people reach retirement age, their earnings begin to drop substantially, reducing their adjusted disposable income (Achdut and Tamir, forthcoming).

The older the elderly are, the lower is their income relative to the national average in every country. The average family headed by a person between the ages of 65 and 74 had an income that was 94 percent of the national average. The average income of families headed by persons age 75 and older, however, was only 80 percent of the national mean. Interestingly, the largest drops in income between families with heads ages 65 to 74 and those with heads age 75 and over are in Norway, Sweden, and Switzerland. The United States had the third highest ratio of adjusted disposable incomes for 65- to 74-year-olds and the second highest ratio for people age 75 and over (only the Swiss were higher). The average incomes of all American elderly families relative to the national mean family income is the second highest among the countries examined here (again, only the Swiss are higher). This fact is confirmed in the last column of table 5.1, where the overall mean adjusted disposable income of households with heads age 65 and over relative to the overall mean income is 0.94 in the United States and 1.02 in Switzerland, compared to an overall average of 0.89.[2]

One final comparison of interest involves single-parent families with other families. As might be expected, the adjusted disposable incomes are everywhere considerably lower for single parents with children than for all families with children. A more interesting comparison is that between the elderly families and single-parent families with children. The elderly in every country also had considerably more income than single-parent families. The adjusted income of the elderly in the United States is 88 percent higher than the income of single-parent families.

Comparisons of the incomes of various types of families to the national average in each country is a useful beginning to the study of relative economic status in the next section. However, overall averages provide no information on patterns of overall income inequality or individual poverty. These patterns, discussed later in the chapter, make a more complex picture than one taken through the simple filter of national averages.

Relative Low-Income and Absolute Poverty Rates among the Young and the Elderly

International poverty comparisons raise both conceptual and methodological issues (Rein 1970). Poverty may be defined in terms of absolute income; but deprivation is a relative concept. In this chapter, relative low income is defined as the percentage of people or families who have disposable income (adjusted by the U.S. poverty line equivalence scale) below one-half the national median adjusted income. Absolute poverty is defined as the percentage of people who have adjusted disposable income below the U.S. poverty line converted into national currencies using the purchasing power parities developed by the Organization for Economic Cooperation and Development (OECD, 1985).[3] The U.S. poverty standard is 42 percent of the adjusted median income in the United States. The effect of using the U.S. poverty standard instead of one-half the median is dramatic in the United States; it reduces the poverty rates of the elderly by a third (from 23.9 percent to 16.1 percent, see table 5.2). In four countries, the U.S. poverty line, adjusted for differences in currency using OECD purchasing power parities, is slightly above one-half the equivalence adjusted median income. In Canada, Sweden, Switzerland, and the United States, it is below half the median. Absolute poverty rates are, therefore, very sensitive to the location of the poverty line relative to the median income, as well as to a host of other factors.[4]

One fact stands out most clearly in table 5.2: The United States has a higher proportion of children in low-income families, by either the relative or the absolute measure, than any other country. In fact, with the exception of Australia and Canada, the United States has more than twice as high a proportion of children in low-income families as do the other countries.

In contrast, the poverty rate for elderly Americans using the absolute U.S. poverty definition is lower than the rate for the elderly in Australia, Norway, or the United Kingdom and not far above West Germany's rate. If we use the relative low-income line, the United States and the United Kingdom have more low-income elderly than any of the other countries. At one end of the scale, poverty among the elderly in Sweden has been virtually eliminated through the high minimum benefits in the Swedish social insurance system.

Table 5.2 RELATIVE LOW INCOME AND ABSOLUTE POVERTY AMONG CHILDREN, ADULTS, AND THE ELDERLY, SELECTED COUNTRIES

Country and poverty measure	Percentage in poor families				Child-to-elderly poverty rate ratio
	Children	Adults	Elderly	Overall	
Australia					
Relative	15.9	9.9	15.7	12.2	1.01
Absolute	16.9	10.5	19.2	13.2	0.88
Canada					
Relative	15.5	10.7	17.2	12.6	0.90
Absolute	9.6	7.5	4.8	7.4	2.00
Germany, F.R.					
Relative	4.9	4.5	11.1	5.6	0.44
Absolute	8.2	6.5	15.4	8.3	0.53
Norway					
Relative	4.8	5.4	5.6	5.2	0.86
Absolute	7.6	7.1	18.7	8.6	0.41
Sweden					
Relative	5.0	6.7	0.8	5.3	6.25
Absolute	5.1	6.7	2.1	5.6	2.43
Switzerland					
Relative	7.8	8.1	11.4	8.5	0.68
Absolute	5.1	6.2	6.0	5.8	0.85
United Kingdom					
Relative	9.3	5.7	29.2	9.7	0.32
Absolute	10.7	6.9	37.0	11.8	0.29
United States					
Relative	22.4	13.4	23.9	17.1	0.94
Absolute	17.1	10.1	16.1	12.7	1.06

Source: Same as table 5.1.

Note: Relative low income includes all persons with adjusted incomes below half the median adjusted national income. Absolute poverty includes all persons with adjusted incomes below the official U.S. Government three-person poverty line converted to other currencies using OECD purchasing power parities, where adjusted incomes are computed using the U.S. Government poverty line equivalency scales.

At the other end, the relatively low minimum benefits in the British public retirement system in 1979 left 37 percent of the elderly poor.[5]

The poverty rates across the eight countries are also sensitive to where the absolute poverty line is drawn. Table 5.3 presents the percentage of children and elderly below not only 100 percent of the U.S. poverty line, but also at 75 and 125 percent of that line.

Table 5.3 SENSITIVITY OF POVERTY RATES TO THE LEVEL OF THE ABSOLUTE POVERTY LINE, CHILDREN AND ELDERLY

	Percentage of persons falling below			
Country	75 percent of poverty line[a]	Absolute poverty	125 percent of poverty line	Spread[b] (percentage points)
Poverty among children				
Australia	7.3	16.9	26.2	18.9
Canada	4.4	9.6	15.2	10.8
Germany, F.R.	2.5	8.2	21.5	19.0
Norway	2.7	7.6	17.2	14.5
Sweden	2.2	5.1	9.7	7.5
Switzerland	2.0	5.1	9.3	7.3
United Kingdom	3.8	10.7	22.7	18.9
United States	9.8	17.1	24.2	14.4
Poverty among the elderly				
Australia	2.7	19.2	38.5	35.8
Canada	1.7	4.8	16.6	14.9
Germany, F.R.	5.9	15.4	29.8	23.9
Norway	4.3	18.7	40.1	35.8
Sweden	0.1	2.1	11.2	11.1
Switzerland	2.4	6.0	13.8	11.4
United Kingdom	6.9	37.0	61.1	54.2
United States	6.8	16.1	26.6	19.8

Source: Same as table 5.1.

a. See note, table 5.2.

b. Difference between 125 percent and 75 percent of the poverty line.

Among children the U.S. poverty rates remain highest when the standard drops to 75 percent of poverty. In fact, at 75 percent of poverty, the difference between the U.S. poverty rate for children and that of the next closest country, Australia, is 2.5 percentage points (versus 0.3 percentage point at 100 percent—the absolute poverty line). When the standard is raised to 125 percent of poverty, Australia has a higher poverty rate for children than the United States. In some countries the spread in child poverty rates between 75 and 125 percent is very large—more than 15 points in Australia, the United Kingdom, and West Germany. Hence although poverty among children is sensitive to where the line is set, it appears from table 5.3 that children are deeper in poverty in the United States than in other countries wherever it is set.

Poverty among the elderly in the United States, compared with

Table 5.4 POOR PERSONS CLASSIFIED AS SEVERELY POOR (percentage)

Country	Families with children	Elderly families[a]
Australia	43.1	14.1
Canada	45.8	35.3
Germany, F.R.	30.5	38.3
Norway	35.5	23.1
Sweden	43.0	4.5
Switzerland	39.3	40.0
United Kingdom	35.5	18.5
United States	57.3	42.3

Source: Same as table 5.1.

Note: Estimates are calculated from table 5.3. "Severely poor" is defined as 75 percent of the U.S. poverty line or below.

a. See note, table 5.1.

poverty among the elderly in other countries, also depends on where the poverty line is set. At 75 percent of the poverty line, the United States has the second highest rate, nearly as high as the rate in the United Kingdom, but at 125 percent, the United States moves closer to the middle of the group of countries shown.

Obviously the extent of poverty is to some extent arbitrary—a function of definition and the social consensus of how these questions should be answered. We have chosen to stick to the poverty standards and equivalence scales developed for use in the United States because we are concerned primarily with U.S. policy.

Below a certain level of deprivation, however, things become much less ambiguous. There is broad consensus that those persons and families whose command of income is three-quarters or less of the absolute U.S. poverty line are experiencing a dire lack of resources in comparison with the consumption norms of industrial society. What proportion of the poor live at this standard of poverty? In all the countries except Switzerland and West Germany, children are more severely poor than the elderly (see table 5.4). In the United States there is more severe poverty among both groups than in any of the other countries. More than 57 percent of all the poor children in the United States are severely poor, compared with 46 percent in Canada, the next closest country. About 42 percent of all poor elderly persons are severely poor in the United States, compared to 40 percent in Switzerland, 38 percent in West Germany, and only 19 percent in the United Kingdom.

If the poverty levels of the young and the old and the relative poverty positions of the young and old in the different countries had been similar, it might have been reasonable to assume that the poverty trends were the result of fundamental, universal trends in industrial and democratic societies. The reality, however, is quite different. The rate of poverty varies considerably among groups and across countries. Three of the European countries clearly have more absolute poverty among their elderly than among their children; Sweden has more poverty among its children, but both rates are so low that the difference is very small. Poverty rates for both age groups are higher in the United States than in the other countries. In both Australia and Switzerland poverty among the elderly slightly exceeds poverty among children, even though the poverty rates of the former are more than double the rates of the latter. Most disturbing are the facts that poverty is highest among children in the United States and more severe by a large margin than in any other country in the comparison. The challenge is not only to try to understand why these differences occur, but also to assess how they might be changed in the future.

POSSIBLE EXPLANATIONS FOR DIFFERENCES IN THE POVERTY STATUS OF THE YOUNG AND OLD

Many social conditions and transfer policies may be related to the economic status of the young and the old. The ones explored in this chapter include:

1. Equivalence scales
2. Relative size of the two age groups
3. Family structure (including changing structures over the life course)
4. Heterogeneity of the population
5. Contribution of secondary earners to family income
6. Income inequality within age groups
7. Effectiveness of the tax and transfer system

Of these seven factors, the first two turn out not to be important in explaining the relative differences among the countries included here. Numbers three through six provide some insight in explaining the patterns of poverty, but none stands out as a dominant explanatory force. The last factor on the list—the tax and transfer systems of each country—plays the largest role in determining how much pretax-pretransfer poverty is reduced and hence the ultimate pattern of posttax-posttransfer poverty both within and across countries.

■ *EQUIVALENCE SCALES*

The proportions of children and elderly in poverty are sensitive to the equivalence scale that adjusts income for relative family size and age structure, as discussed in chapter 2 of this volume. The absolute poverty rate is much more sensitive to the choice of equivalence scale, however, than are the relative positions of different groups across countries. Particularly conspicuous is the fact that the poverty of American children is the highest of all eight countries regardless of which equivalence scale is used with one minor exception (Australia, with a subjective equivalence scale). Excluding Australia, the poverty rate for children in the United States is 58 percent, 60 percent, and 83 percent higher than the rates for the next closest country using the U.S., LIS, and subjective equivalence scale, respectively (Torrey and Smeeding 1988).

■ *RELATIVE SIZE OF AGE GROUPS*

There are two conflicting hypotheses about how poverty may be related to the relative size of the age group. The first hypothesis, "relative burden," is that countries with relatively large and growing dependent populations may find it difficult to allocate enough economic resources to these groups to maintain their relative economic well-being. Therefore, large numbers of elderly, children, or both in the population would increase the poverty rates for the elderly, children, or both. The second hypothesis, "political clout," is that large dependent groups will create political pressure to increase their share of the economic pie. In this case, poverty rates will be negatively correlated with group size. The evidence is not strong for either of these hypotheses. Table 5.5 presents the percentage of the total population of each country that is young (ages 0 to 17), elderly (age 65 and over), the combined total of these (sometimes referred to as the total dependency ratio), the ratio of the young population to the old population, and the ratio of child poverty to elderly poverty.

The dependency ratio varies only from 36 percent to 45 percent, and in all countries the young are a considerably larger proportion of the population than the elderly. Yet within each country, children do not have consistently more or less poverty than the elderly. In

Table 5.5 YOUNG AND ELDERLY POPULATION SHARES AND RELATIVE POVERTY RATES

Country	Young 0–17 years	Elderly 65 + years	Young and elderly combined (dependency ratio)	Ratio of young to elderly in population	Ratio of young to elderly in poverty[a]
Australia	30	9	39	3.3	0.9
Canada	28	8	36	3.5	2.0
Germany, F.R.	24	15	39	1.6	0.5
Norway[b]	32	13	45	2.5	0.4
Sweden	23	18	41	1.3	2.4
Switzerland	26	14	40	1.9	0.8
United Kingdom	28	13	41	2.3	0.3
United States	29	11	40	2.6	1.1

Source: Same as table 5.1.

a. Taken from absolute poverty estimates in table 2, column 6.

b. The Norwegian figures for children and elderly are taken from OECD population figures. The LIS estimate of children in Norway is 36 percent and of the elderly, 12 percent. Because the Norwegian file identifies children via tax dependency, and because in Norway some tax dependents may not be children (for example, disabled adults living with other families members), we decided to use the OECD population estimates instead of the LIS estimates.

three countries children have more poverty than the elderly, whereas in five countries children have less.

The comparison of poverty rates of children in the eight countries also indicates no consistent relationship between child poverty and children as a proportion of the population in each country. Nor is there a consistent pattern of poverty and relative size of the aged population across countries. The lack of consistent relationships means that neither the relative burden nor the political clout hypothesis is supported by the cross-sectional data on the eight countries examined.

■ *FAMILY STRUCTURE*

Some family structures are less vulnerable to poverty than others. In all the countries two-adult families, both young and old, had higher average incomes than one-adult families did and were less vulnerable to poverty. Even so, vulnerability to poverty by family structure varied considerably by country. In all eight countries children in one-parent families were considerably more likely to have less than one-half the median income (table 5.6 panel A) and

Table 5.6 POVERTY AND LOW INCOME AMONG CHILDREN BY FAMILY TYPE, SELECTED COUNTRIES

	Percentage of low-income children in each family type			
Country	One-parent families[a]	Two-parent families[b]	Other families[c]	All types of families
A. Relative low income rates of children by family type[d]				
Australia	63.5	11.4	10.2	15.9
Canada	51.0	12.0	11.1	15.5
Germany, F.R.	30.6	2.0	7.8	4.9
Norway	8.6	3.0	10.0	4.8
Sweden	8.3	4.4	0.5	5.0
Switzerland	18.4	6.4	10.0	7.8
United Kingdom	36.2	8.1	14.1	9.3
United States	59.3	13.8	22.1	22.4
B. Poverty rates[e] *of children by family type*				
Australia	65.0	12.4	10.6	16.9
Canada	38.7	6.8	5.5	9.6
Germany, F.R.	35.1	4.9	12.1	8.2
Norway	21.6	4.4	12.7	7.6
Sweden	8.6	4.5	0.5	5.1
Switzerland	12.9	4.1	3.8	5.1
United Kingdom	38.6	9.5	2.5	10.7
United States	51.0	9.4	16.2	17.1
C. Percentage of children by family type				
Australia	9.1	75.3	15.6	100.0
Canada	9.6	71.1	19.3	100.0
Germany, F.R.	5.5	72.2	22.3	100.0
Norway	15.7	78.1	6.2	100.0
Sweden	14.8	84.8	0.4	100.0
Switzerland	11.6	87.3	1.1	100.0
United Kingdom	8.0	76.7	15.3	100.0
United States	14.7	61.9	23.4	100.0

Source: Same as table 5.1.

a. Children in one-parent families are living with one natural parent and no other adults in the family.

b. Children in two-parent families live in units with two parents and no other adults.

c. Children in other families may live with adults other than parents: for example, living with grandparents, in extended family situations, and in foster homes.

d. Relative low income is explained in text. Children are defined as persons 17 years or under. Adjusted income was calculated using the U.S. poverty line equivalence scales.

e. Absolute poverty rates, as explained in text.

Table 5.7 THE DIFFERENCE U.S. DEMOGRAPHIC STRUCTURE MAKES TO CHILD POVERTY IN OTHER COUNTRIES (percentage)

Country	Actual poverty rate	Poverty rate with U.S. demographic structure[a]	Increase (decrease)[b]
Australia	16.9	19.6	+16.0
Canada	9.6	11.2	+16.7
Germany, F.R.	8.2	10.5	+28.0
Norway	7.6	7.5	−1.3
Sweden	5.1	5.1	0
Switzerland	5.1	5.4	+5.9
United Kingdom	10.7	12.7	+18.7
United States	17.1	17.1	0

Source: Same as table 5.1.

a. Assumes no change in poverty rates within family types, but with 14.7 percent of children in single parent families and 85.3 percent in other types of units, the same demographic breakdown of children by family type as in the United States.

b. Poverty rate with the U.S. demographic structure minus the actual poverty rate, divided by the actual rate.

to be in absolute poverty (table 5.6, panel B) than children living in two-parent families. But, curiously, the percentage of children in one-parent families by country was unrelated to the rates of low income (table 5.6, panel C). Both Norway and Sweden have higher proportions of children in families with only one parent (15.7 percent and 14.8 percent, respectively) than the United States (14.7 percent). And Switzerland ranks next below the United States (11.6 percent of children live in single-parent units). These are the highest shares (table 5.6, panel C) among the countries studied here. Yet the low-income and poverty rates of children in the one-parent families of Norway, Sweden, and Switzerland are lower in any of the other countries studied. If anything, except for the United States, table 5.6 appears to show a slight negative correlation between the proportion of children in single-parent families and poverty rates.

So the United States is again the exception, with a high percentage of children in single-parent families *and* high single-parent poverty. The *combination* has an important influence on overall child poverty rates. If every country had the same percentage of children in single-parent families as the United States in 1980 but its own child poverty rate, the poverty rate among all children would increase everywhere but in Norway and Sweden (see table 5.7). In all other countries except Australia, however, the increase in child poverty would *still* leave those countries far below U.S. rates.

What distinguishes the situations in the United States and Australia from those in other countries is that the single-parent families are so much more vulnerable. They have lower relative incomes and their low-income rates are more than double the rates of other countries. Australia is much less rich than the United States, and it has a much lower share of children in single-parent families. The most striking element of tables 5.6 and 5.7 is the high levels of poverty in the United States compared with the levels for other high-income countries with similar demographics.

The varying family structures of the elderly also provide some insights into the pattern of poverty (table 5.8). In all the countries poverty rates are much lower among elderly couples than among elderly single persons, but poverty rates for the elderly who live alone vary widely. The percentage of elderly living alone is actually highest in Sweden (50 percent) where they have the lowest poverty rate. It is much higher than in the United Kingdom (37 percent), for example, which has by far the highest poverty rate among the aged. Few elderly live alone in Australia (about one-third), where poverty rates among the elderly living alone are very high. But not much more than one-third (36.5 percent) live alone in Canada, where poverty rates among the old are very low.[6]

Poverty varies over the life course as well as by family structure, declining as the family head enters middle age and rising again in the later years. What is less well documented is the joint role of age and family structure. Consider the U.S. experience to illustrate the point. Solo parenting in the United States is concentrated among young family heads—90 percent of these family heads are under 25 years of age. Poverty rates are especially high for this group. Solo parents account for 12 percent of all families with a head under 25; nearly two-thirds of these families are poor. In contrast, married couples account for two-thirds of all families with children in this age group; only 14 percent of children in these families are poor (still above the overall poverty rate of 2.4 percent in the United States).

Poverty again rears its head in later old age and again mainly among women. Smeeding and Torrey (1986), using the LIS data for the same eight countries, find that both low-income and poverty rates among the elderly are highest among single women living alone who are age 75 or over. In every country studied, the poverty rates for the 75-and-over group were at least 50 percent higher than among

Table 5.8 LIVING ARRANGEMENTS AND POVERTY AMONG THE ELDERLY

	Percentage of elderly persons living				
	Alone				
Country	Male	Female	In married couples	Other combinations[a]	Total
A. Living arrangements					
Australia	8.4	25.1	59.4	7.1	100.0
Canada	9.3	27.2	47.2	16.3	100.0
Germany, F.R.	6.3	36.7	48.5	8.5	100.0
Norway	15.1	41.2	10.7[b]	33.0[b]	100.0
Sweden	13.6	36.2	49.8	0.5	100.0
Switzerland	10.4	39.5	49.7	0.3	100.0
United Kingdom	8.9	27.9	49.9	13.3	100.0
United States	7.6	27.5	50.0	14.9	100.0

	Absolute poverty rate among elderly persons living				
	Alone				
Country	Male	Female	In married couples	Other combinations[a]	Total
B. Poverty					
Australia	40.1	48.0	6.1	2.9	19.2
Canada	6.2	9.4	1.6	5.5	4.8
Germany, F.R.	18.6	24.0	9.3	10.3	15.4
Norway	32.3	31.0	0.4	3.1	18.7
Sweden	6.8	3.0	0.2	0.6	2.1
Switzerland	8.7	11.4	1.1	0.0	6.0
United Kingdom	55.1	69.5	24.1	5.2	37.0
United States	25.7	30.7	8.2	11.1	16.1

Source: Same as table 5.1.

a. "Other combinations" include all elderly not living alone and not living in (married) couples.

b. The Norwegian data file lists two elderly adults living together as couples only if they are married; but, because living together unmarried is customary in Norway, even for couples who have been living together for several decades, other combinations and couples are hard to distinguish.

the 65- to 74-year-old group. Moreover, in every country studied, the majority of very elderly poor were single women living alone.

Thus it is the situation of young single women and their children and very old single women that characterizes social disadvantage in industrial societies, particularly in the United States. The poverty of our very old single women we share with other countries; the poverty of our families with children, however, is considerably higher than in any other country but Australia.

Table 5.9 POVERTY RATES AMONG SELECTED SUBGROUPS IN NATIONAL POPULATIONS (percentage)

	Children	Elderly
Australia, total	16.8	19.2
Native	17.1	19.7
Foreign	16.3	17.4
Canada, total	9.6	4.8
Native	9.6	4.8
Foreign	9.6	4.6
(Arrival after 1971)	(10.4)	(17.6)
Switzerland, total	3.8	6.0
Native	5.6	5.1
Foreign	2.6	25.5
United States, total	17.1	16.1
Blacks	40.5	36.7
Hispanics	28.9	27.0
White (nonblack and non-Hispanic)[a]	11.4	14.0

Source: Same as table 5.1

Note: Absolute measure includes all persons with adjusted incomes below the official U.S. Government three-person poverty line converted to other currencies using OECD purchasing power parities, where adjusted incomes are computed using the U.S. poverty line equivalence scales.

a. Poverty rates for U.S. whites and others, including Hispanics, are 13 (children) and 14.3 (aged). Because Hispanics may also be either black or white, the easiest way to separate U.S. minorities from the U.S. majority is to calculate the nonblack and non-Hispanic poverty rate. We call this the "white" poverty rate in this chapter.

■ HETEROGENEITY OF POPULATION

If poverty rates vary by race or ethnic groups, as they do in the United States, countries with a more diverse population may have higher poverty rates than more ethnically homogeneous countries. Among the nations compared in this chapter, four—Australia, Canada, Switzerland, and the United States—have populations that are culturally diverse enough to separate minority subgroups. Norway, Sweden, and the United Kingdom do not differentiate. The West German data set excludes foreign-born heads of households. In the United States, black families with children are particularly economically disadvantaged relative to comparable white (nonblack and non-Hispanic) families (table 5.9). The low-income and poverty rates among black children are almost four times as high as the rates among white children; the same rates for the black elderly are more than two-and-one-half times the rates for white elderly. Hispanic poverty rates for children and the elderly are double the rates for nonblack non-Hispanics.

Analysts have speculated that the U.S. poverty rates are high because of our diversity. If this speculation were correct, the poverty rates of whites in the United States relative to whites in other countries would be much more similar than the overall rates. But this turns out not to be the case. When the poverty rates of the nonminority populations in the other countries with data are compared, the poverty rates for young and old American whites are still high compared with two of the three other countries. Native Canadians, both young and old, have lower poverty rates than whites in the United States. So do the native Swiss. And the poverty rate among white American children is higher than the minority or majority poverty rates for these other countries (see table 5.2 presented earlier).

Heterogeneity does matter; poverty rates are different for different populations, and poverty rates in the United States are high in part because of its social and ethnic diversity. But this diversity does not fully explain the broad differences in poverty among nations in general and the high poverty of American children in particular.

■ *WIVES' INCOME AND THE REDUCTION OF POVERTY*

The "traditional" income redistribution model starts with a family's traditional income (husband's earnings and assets) before taxes and transfers. This is often described as "original income," implying that the state has played no important role in shaping the level or distribution of this income. The state enters the redistributive process only at the second stage when it taxes (reduces incomes of some) and transfers (adds to the resources of others).

One of the important recent changes in family income is that families no longer live on what has been traditionally defined as family incomes. In particular, families are more dependent on the earnings of wives than ever before. Women have always worked, but only in recent years has the income of wives become an important income source for families.

Different earnings patterns among wives may contribute to our understanding of different poverty patterns among families in different countries. Taking wives' earnings into account, however, poses a conceptual problem, because we are not clear about when in the process of generating family income wives' earnings comes

Table 5.10 CONTRIBUTION OF WIVES TO REDUCING POVERTY AMONG POOR FAMILIES WITH CHILDREN

Country	No wives' earnings	Wives' earnings less than the poverty gap	Wives' earnings greater than the poverty gap	Total
	Percentage distribution of wives in poor families			
Australia	71.8	6.8	21.4	**100**
Canada	47.4	8.7	43.9	**100**
Germany, F.R.	57.1	4.3	38.6	**100**
Norway	22.0	12.3	65.6	**100**
Sweden	20.5	4.5	75.0	**100**
Switzerland	29.7	—	70.3	**100**
United Kingdom	62.4	5.6	32.0	**100**
United States	41.0	15.7	43.3	**100**

Source: Same as table 5.1.
Note: Poor families include only those with two parents and one or more children. Poverty is computed by taking disposable income and subtracting wives' earnings and means-tested transfer benefits.

into play. Wives' earnings potentially can substitute for any of several income sources—in particular, the earnings of other family members or means-tested benefits. A theory of income-generating dynamics and substitution is needed to fully disentangle the story. Such a theory is beyond the scope of this chapter. Fortunately, when we tried several different scenarios of where wives' income enters the process, we found that it makes much less difference to the basic story than we had expected.

In this analysis we assume that wives' earnings come next to last in the income-generating process of families, with means-tested welfare as the income of last resort. Thus, we counted all income sources except wives' earnings and means-tested benefits. Then we computed the number of families in poverty and the poverty gap for three different earnings positions of wives living in families with children: wives without earnings, wives whose earnings were larger than the poverty gap, and wives who earned less than the poverty gap (table 5.10). Three patterns emerge: countries in which about two-thirds or more of the wives do not work (Australia, the United Kingdom), countries in which roughly half the wives work, (Canada, the United States, West Germany), and countries in which more than two-thirds of the wives work (Norway, Sweden, and Switzerland). The pattern is relatively consistent across countries: the higher the proportion of wives who work, the higher the proportion of wives whose earnings move their family out of poverty.

These findings indicate that, for the two-thirds of children who live in families with two parents, wives' work behavior can play an important role in prevention of poverty for the children. Of course, we do not know what the economic position of the family would be if the wife did not work. It seems likely that some of the families would have turned to means-tested benefits. But in cases where such substitution occurs, countries may differ in the extent to which these benefits move a family out of poverty, as discussed later in the chapter.

■ *INCOME INEQUALITY*

Poverty may occur not only when average incomes are low, but also when incomes are unequal. How well does the proportion of poverty in a country correlate with the degree of inequality? Our evidence indicates that the relationship is not strong. We measured the distribution of incomes for various groups within a population as well as overall for the eight countries in our study (using the Gini coefficient as our measure).[7] In all countries except Sweden, incomes were less equal among the elderly than among families with children. And in all countries but Sweden and Norway, inequality among single-parent families was higher than among the elderly. Income inequality among all groups was higher in the United States than in any of the other countries, with Canada next on the list.

The level of income inequality among families with children is only somewhat related to their poverty rates. The United States, which had the highest levels of overall inequality, for example, had the highest child poverty rates; Sweden had the lowest levels of inequality and lowest child poverty. However, child poverty rates are the same in Switzerland as in Sweden, despite significantly higher overall levels of inequality among families with children in Switzerland. And the child poverty rate is much higher in Australia than in Canada and West Germany, despite similar or lower overall inequality levels among families with children in Australia.

This direct relationship is even weaker for the elderly. The United States and Canada, which have the highest inequality, have the fourth and second lowest poverty rates. Inequality among the British elderly is (tied with Switzerland) third lowest of the eight countries, but absolute poverty rates are by far the highest in the United Kingdom among the countries studied. The wage replacement ratio of the British social pensions for the elderly is similar to the wage replacement ratios of Canada and West Germany (Smeeding and Torrey 1986). But the wages themselves were sufficiently low that, even with a relatively low degree of inequality, the average elderly family in the United Kingdom had a relatively low income and therefore more poverty.

■ *THE INCOME SUPPORT SYSTEM*

The income support system, as already noted, helps explain different poverty patterns across countries. Government programs among the eight countries studied vary considerably in how much they provide to their poverty populations and through which mixes of programs, and comparisons of the roles of these various government programs suggest that different social philosophies are embedded in the transfer programs of the industrialized countries studied.

These different social philosophies can be divided into three types: (1) *selective strategies*, which seek target efficiency through categorical, income, and asset-tested standards of eligibility; (2) *social insurance*, under which entitlement is based on the past contribution of employer, employee, or both, thus depending on a history of attachment to paid employment and linked not to need but to work; and (3) *universal entitlement programs*, based on common citizenship in society, of which children's allowances are the prototype.[8]

Alongside this system of benefits is the structure of taxation. Countries differ enormously in how much the structure of taxes affects poverty. For example, the tax system increases poverty among families with children in Canada by less than 1 percent, in Sweden by as much as 12 percent. The role of transfers can only be assessed appropriately in combination with the role of taxes.

Social insurance benefits are not means-tested and therefore go to both poor and nonpoor. The tax systems in every country studied, however, are related to overall incomes. For this reason, the countries that rely heavily on social insurance programs to help the poor also have higher effective tax rates, even among the poor, to recover some of their broadly distributed benefits. The United States, for example, which provides most of its income support to poor families through income- and means-tested programs, and much less via social insurance (which in turn is not heavily taxed), has one of the lowest effective tax rates on poor families. In this section we assess the role of specific types of transfers in filling the poverty gap—the difference between resources before taxes and transfers and needs, as measured by the absolute poverty line adjusted for family size.

Table 5.11 ROLE OF PUBLIC TRANSFERS IN REDUCING THE POVERTY GAP AMONG CHILDREN AND THE ELDERLY

Family type and country	Poverty gap reduction rate[a]	Percentage of total poverty gap reduction			
		Social insurance	Means-tested program	Child allowances	Total
Families with children					
Australia	0.71	—	87	13	100
Canada	0.85	38	48	14	100
Germany, F.R.	1.06	68	11	21	100
Norway	1.05	86	3	11	100
Sweden	1.76	52	37	11	100
Switzerland	0.91	93	7	—	100
United Kingdom	1.17	38	38	24	100
United States	0.65	29	71	—	100
Single-parent families					
Australia	0.71	—	88	12	100
Canada	0.75	19	69	12	100
Germany, F.R.	0.84	67	16	18	100
Norway	1.13	83	4	13	100
Sweden	2.03	45	45	10	100
Switzerland	0.78	92	8	—	100
United Kingdom	0.90	15	63	22	100
United States	0.58	7	93	—	100
Elderly families					
Australia	1.30	—	100	—	100
Canada	1.61	94	6	—	100
Germany, F.R.	1.56	99	1	—	100
Norway	1.24	99	1	—	100
Sweden	2.42	94	6	—	100
Switzerland	1.92	95	5	—	100
United Kingdom	1.10	91	9	—	100
United States	1.48	93	7	—	100

Source: Same as table 5.1.

a. This rate is calculated by dividing total public transfers to the pretax/pretransfer poor by the total poverty gap.

The relative effectiveness of the transfer systems of the eight countries in filling their poverty gaps for children and the elderly is shown in the first column of table 5.11. All countries more than fill the poverty gap for elderly families, but the United Kingdom does least well in this respect. The United States is in the middle of the group. All countries do less well in filling the poverty gap for families with children than they do for the elderly, and four of the eight do not fill the entire gap. The United States is conspicuously at the bottom of the list, filling less than two-thirds of the gap—even below Australia, which is a considerably poorer country. For single-parent families all except the two Scandinavian countries do worse than for all families with children. The United States is again at the bottom, and again below Australia.

One can gain further insight into the differences by looking at the main categories of transfer by family type (the rest of table 5.11). For the elderly in all countries except Australia, the vast majority of the transfers are social insurance. For families with children, however, countries differ. In four of the eight countries (Norway, Sweden, Switzerland, and West Germany) non-means-tested social insurance benefits provide considerably more income than means-tested welfare benefits for all families with children, and in three of the four (Norway, Switzerland, and West Germany) the same is true for single-parent families.

The two countries that fill least of the poverty gap for all families with children (Australia and the United States) depend much more heavily on means-tested benefits than the other six countries. And four of the six countries that fail to fill the poverty gap for single-parent families rely more heavily on means-tested than on social insurance benefits for that group. Only Switzerland and West Germany of the countries that fail to fill the poverty gap for this group depend primarily on social insurance.

Perhaps the most interesting finding from table 5.11 is the critical role that social insurance programs play relative to children's allowances in reducing the poverty gap. It might be expected that, in countries that have them, child-related benefits such as child allowances and maternity grants would be an important source in filling the poverty gap for families with children. In fact, social insurance benefits (which are primarily employment-related) are overwhelmingly more important in every country with both kinds of benefits save for U.K. single parents with children.

The proportions of families in poverty before taxes and transfers, after taxes, and after taxes and transfers provide additional insight into the differences among countries. These are shown in table 5.12, along with the overall poverty reduction rates. Note that a poverty reduction rate can be low either because initial poverty was low (see Switzerland for all families with children) or because the system is not very effective (see the United States for single-parent families).

Table 5.12 ROLE OF PUBLIC TRANSFERS IN REMOVING FAMILIES FROM POVERTY, CHILDREN AND THE ELDERLY

Family type and country	Proportion of formerly poor families			Overall poverty reduction rate
	Pretax/ pretransfer	Pretransfer/ posttax	Posttax/ posttransfer	
Families with children				
Australia	17.6	19.9	15.0	14.8
Canada	13.6	14.4	8.6	36.8
Germany, F.R.	7.9	15.0	6.9	12.7
Norway	12.1	15.9	6.4	47.1
Sweden	10.4	22.5	4.4	57.7
Switzerland	4.4	6.2	4.1	6.8
United Kingdom	14.1	20.6	8.5	39.7
United States	16.6	18.0	13.8	16.9
Single-parent families				
Australia	67.6	71.2	61.4	9.2
Canada	48.0	49.1	35.3	26.5
Germany, F.R.	37.2	47.1	31.9	14.2
Norway	35.2	40.8	17.6	50.0
Sweden	33.1	49.4	7.5	77.3
Switzerland	14.5	17.9	11.9	17.9
United Kingdom	53.1	59.6	36.8	30.7
United States	49.3	51.4	42.9	13.0
Elderly families				
Australia	72.2	74.1	23.8	67.0
Canada	56.8	57.6	5.9	89.6
Germany, F.R.	80.6	82.2	17.1	78.8
Norway	76.6	81.3	19.6	74.4
Sweden	87.9	98.1	2.6	97.0
Switzerland	59.8	65.6	7.3	87.8
United Kingdom	77.6	80.8	40.9	47.3
United States	59.0	59.8	18.7	68.3

Source: Same as table 5.1.

Comparing the first two columns of table 5.12 provides an indication of how much the tax systems in the various countries take from the poor. As already noted, the big effects are going to be seen for the countries that depend most heavily on non-mean-tested transfers. Australia, Canada, and the United States have the lowest tax bite on all families with children and on single-parent families (the smallest differences between the first two columns). The tax system also takes more from families with children and single-parent families in all countries than from elderly families.

Table 5.13 AVERAGE POVERTY GAP OF FAMILIES WHO WERE STILL POOR AFTER TAXES AND TRANSFERS

	Type of household	
Country	Families with children	Elderly families
Australia	31.6	12.6
Canada	31.4	22.7
Germany, F.R.	24.1	26.5
Norway	25.4	18.8
Sweden	28.4	3.0
Switzerland	28.8[a]	19.8[a]
United Kingdom	21.4	16.4
United States	37.7	29.3

Source: Same as table 5.1.

Note: The poverty gap is the difference between the average income of the poor and the poverty line divided by the poverty line.

a. Some Swiss families who are poor after taxes and transfers have little net income because of large tax losses. These anomalies have been eliminated from the Swiss data.

The proportion of families left poor after taxes and transfers is shown in the third column of table 5.12. The ranking is consistent with the findings on the poverty gap reductions of the previous table. The United States again leaves more families with children and more single-parent families poor than any other country. And its poverty reduction rate for those two groups is lower than the rates for all countries except Australia (which is poorer than the United States) and Switzerland (which has relatively little pretax-pretransfer poverty).

Pretax-pretransfer poverty is much higher for the elderly in all countries than it is for all families with children and somewhat higher than for single-parent families. This is to be expected because most pretransfer income comes from earnings. The overall poverty reduction rate is also invariably much higher than for the other groups. Even so, only Sweden virtually eliminates poverty among the elderly, and the United States does less well than four other countries (Canada, Sweden, Switzerland, and West Germany).[9]

It remains to look at how far into poverty the families who are left in poverty sink in the different countries. This can be measured by the average poverty gap after taxes and transfers (table 5.13). The poor performance of the United States with respect to families with children is as conspicuous here as in earlier tables; no other country has a larger poverty gap for those families after taxes and transfers.

With the exception of West Germany, families with children are in deeper poverty than elderly families. In the United States, for example, the poverty gap for families with children is over one-quarter larger than the gap for elderly households. However, the posttax-posttransfer poor elderly in the United States are worse off than the comparable group in other countries.

CONCLUSIONS

In the United States over the past decade (1976–86), the official poverty rates for the elderly and for children have diverged considerably, with child poverty rising from 15.8 percent to 19.8 percent and elderly poverty declining from 15.0 percent to 12.4 percent. If noncash transfers in the form of food, housing, or medical care were included in the income definition for determining poverty, the differences between poverty among the elderly and among children would be even wider (U.S. Bureau of the Census 1985). Other chapters in this volume have made these points as well. The contribution of this chapter is to compare poverty rates and incomes of children and elderly in the United States with those in several other nations.

The patterns of income and poverty described here suggest more diversity among eight modern Western industrial nations than generally suspected. The relative economic status of the young and old varies considerably by country. There is, however, more similarity in the economic status of the elderly in the eight countries than of families with children, largely because of the similarity of government programs for the elderly, and the levels of benefits provided through the income tax and transfer systems in general, and the social insurance systems in particular. The economic status of children varies much more than the status of the elderly; so does the variety of transfer approaches and level of benefits provided to poor families.

The poverty of American children contrasts glaringly with the poverty of the young in every other country but Australia (the country with the lowest adjusted median family income among the eight included in the comparison). The poverty rate for American children was 70 percent higher than the rate for children in Canada, our closest neighbor. In fact, American children are not only at a disadvantage relative to American elderly; they are at a disadvantage relative to their peers in all the other countries examined here.

except Australia. The reasons for this relative disadvantage seem straightforward:

- The high U.S. rates of poverty and low income for children are due neither to an inordinately high proportion of children in the population share, nor to a measurement quirk (for example, choice of equivalence scales or low-income or poverty measure), nor to overall levels of income inequality.
- Neither poor minority populations nor a preponderance of single-parent families adequately explains high U.S. poverty rates for children. Our minorities do have higher poverty rates than the white majority, but so do minorities in other countries. Our poverty rate for majority families with children is still second highest among the countries studied.
- Although the United States has proportionately more single-parent families than several of the other countries have, the American families are economically much more vulnerable. They have both more income inequality and more poverty than similar families elsewhere.[10]
- The income transfer system for families with children in the United States seems to be the main reason for these high poverty rates. It relies on categorical means-tested programs much more than do other countries (with the exception of Australia) to provide benefits to poor children. Despite their presumably more effective targeting, countries that rely on means testing seem politically unable or unwilling to raise benefits high enough to be as effective in moving children out of poverty as universal and social insurance approaches. This situation is particularly glaring in the United States, where the level of benefits in comparison to the poverty line is lower than for all countries except Switzerland.
- The ineffectiveness of the U.S. system is further exacerbated by its categorical nature, which excludes most poor two-parent families with children from public support. Even Australia has a modest universal child allowance program.

The social welfare programs of each country can be seen as a reflection of its social philosophy. Some national programs implicitly favor one group over another. Some programs are considered a right of the beneficiaries (social insurance) or a right of all citizens (universal programs); others are considered a favor (means-tested). Some programs and philosophies may be transferable across borders; others, almost certainly, are not. In particular, the lack of U.S. commitment (through the transfer system) to securing minimum decent standards for poor children stands in sharp contrast to the commitment of other countries studied here. Although the U.S. public safety net does an average-to-above-average job for the otherwise needy elderly, many poor families with children in the United States are largely excluded from the safety net, and those who are not excluded receive inadequate benefits.

This chapter has focused on economic status under the social programs of eight countries in operation about three-quarters of the way through the twentieth century. In this context, the situation of American children is comparatively bleak. Although any changes in social welfare programs must be made in the context of the social philosophy of the country concerned, international comparisons of social systems and their economic consequences help define a range of options available to national policymakers. These comparisons also provide encouragement for improvements, because no economic outcome seems either immutable or inevitable in our modern industrial societies.

Notes

1. The West German data set excludes households with foreign-born heads, as well as the homeless and the institutionalized; the Swiss data set excludes nonresident foreigners.

2. The reader may wonder about the sensitivity of these estimates to choice of equivalence scales and income concepts. Tables identical to table 5.1 using the LIS equivalence scale indicate virtually the same pattern as that shown here. Unadjusted incomes indicate a lower income for the elderly but, in general, a higher income for younger childless couples than for younger families with children. Per capita incomes (household income per family member) indicate a higher relative income for the elderly in all countries.

3. Some data sets are for 1981 and some for 1979; the U.S. poverty line and OECD purchasing power parities for the correct year were used in each case. The 1979 and 1981 U.S. poverty lines differ only by the change in the Consumer Price Index over that period. For Switzerland (1982 data) and Australia (1981–82 data), adjustments were made for the appropriate year using the same procedure.

4. For example, Swiss and U.S. median incomes (in 1979 U.S. dollars) are virtually identical. The poverty line in both countries (using the U.S. standard) is also the same proportion (42 percent) of median income. However, the Swiss poverty rate is 47.4 percent below its low-income rate, whereas the U.S. poverty rate is 33 percent below its low-income rate. In summary, changes in the poverty rate depend on a host of factors including equivalence scales, overall inequality, and group incomes, not just the relationship between half of the median income and the U.S. poverty line. Tables 5.3 and 5.4 are designed to illustrate this sensitivity.

5. If the British supplemental benefit and housing allowance levels are added together to construct a British "poverty measure," the poverty rate among the British elderly drops to 2.6 percent.

6. Standardizing poverty rates among the elderly as was done for children in table 5.7 did not much affect the results in table 5.8, so these figures are not shown here.

7. The Gini coefficient measures the deviation of the actual distribution of income from perfect equality. It ranges from zero to one, with numbers closer to one indicating more inequality.

8. In practice these social philosophies are often mixed. Sweden's housing allowance provides an excellent example. It is based only on a test of income; assets such as property and savings are not taken into account. Moreover, it is an income-tested program that reaches more than half of all families with children and thus goes a long way toward being a universal program. Comparing income-tested Swedish housing allowances with American style means-tested AFDC—which reaches less than 20 percent of poor families with children—can therefore be misleading, even though both are selective programs based on a test of need. This reservation notwithstanding, the threefold classification effectively captures the philosophical differences among countries and the resulting differences in patterns of poverty alienation.

9. The high West German and Swedish social insurance and taxes on the elderly are part of the same package. In these countries, means testing of transfers is accomplished largely through the income tax system, which includes virtually all social insurance and other public transfers in the tax base.

10. Australia is the only country of the eight that has higher poverty among single-parent families than the United States. Even so, Australia has a smaller posttax-posttransfer poverty gap for these families (26.5 percent) than does the United States (32.2 percent).

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MOTHERS ALONE

Strategies for a Time of Change

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Table 3–1 Lone-Parent Families with Children under Age 18[a], Various Years (Percentages)

Country	*Year*	*Total as Percent of All Families with Children*	*Female-Headed*	*Male-Headed*
Austria (under age 15)	1984	13	12	1
Britain (under age 16)[b]	1985	14	12	2
Denmark	1984[c]	26	23	3
Finland	1984	15	13	2
F.R. Germany	1985[c]	13	11	2
France	1981[b]	10	8	2
Hungary	1984	20	18	2
Italy	1981	6	5	1
Norway (under age 16)	1982	19	18	1
Sweden[d]	1985	32	29	3
United States	1985	26	23	3
	1970	13	12	1

[a] Or other ages as specified.

[b] To age 19, if in school.

[c] These numbers include some percentages of cohabiting couples but the breakdowns are not precise.

[d] To age 19, if in school. The rates include cohabiting couples. For 1985, 18 percent of families with children were headed by women living alone and 14 percent by cohabiting couples.

Sources: Country census or micro-census reports, reports to 1987 Council of Ministers meeting (see endnote), individual interviews. All percentages rounded.

Monthly Labor Review, March 1984.

Japan's low unemployment: an in-depth analysis

A BLS analysis of Japan's labor force data concludes, in contrast to a private study, that Japanese unemployment rates are only slightly understated relative to U.S. concepts

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Japan's unemployment rates have long been among the lowest in the world. From 1960 through 1974, joblessness in Japan averaged 1.3 percent and never exceeded 1.7 percent, according to the Japanese labor force survey. Among the major industrial countries, only Germany had a better labor market performance. Japan's employment situation worsened after the 1973 world oil crisis and, since 1975, Japanese unemployment has been more than 2 percent, currently 2.6 percent. By contrast, unemployment rates in most Western industrial nations are now 3 to 5 times as high.

These relatively low Japanese unemployment rates, even in times of recession, suggest that the rates may be understated as compared with Western countries because of definitional or conceptual differences. Some recent articles or studies have come to this conclusion.

For example, a thoughtful article by Koji Taira in the July 1983 *Review* presented a timely analysis of Japan's low unemployment rate. Using data from Japan's special March labor force surveys and U.S. definitions of unemployment, Taira adjusted official Japanese rates to approximate U.S. concepts. He concluded that the Japanese jobless rate would be "nearly double the official unemployment rate" if U.S. concepts were used.[1]

The BLS does not agree with Taira's conclusion. We argue that he does not give weight to the fact that March is a very unusual month for the Japanese labor market. March is the end of the fiscal year, when firms there traditionally hire new workers, and the end of the school year, when graduates flood the labor market.

Taira's major adjustment to the Japanese unemployed is the addition of March school graduates who are waiting to start jobs within 30 days. Although he is aware that promises of employment to graduates in Japan are almost never withdrawn, Taira proceeds to abstract from this economic and cultural effect and treat the graduates waiting to start jobs as if they were in the United States where employment offers are nowhere near as firm. Moreover, normally no such large body of persons would be waiting to begin jobs in 30 days; hence, it is more realistic not to count them as part of the unemployed. Taking this and some other more minor differences with Taira into account, we find that Japanese unemployment rates are only slightly understated in relation to U.S. concepts.

Although we challenge Taira's conclusion that Japanese unemployment is considerably understated, we agree that the Japanese labor market is, in many ways, unique. Institutions, attitudes, and economic and social structures are certainly different in Japan than they are in the United States. Indeed, it is in these differences, rather than in statistical methods and definitions, where we find the real reasons for the low unemployment rates in Japan. These differences tend to push Japanese labor slack into underemployment and hidden unemployment. After a detailed analysis of Taira's work, this article presents expanded unemployment rates—incorporating several forms of labor underutilization—which

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draw the Japanese rate somewhat closer to U.S. levels. These expanded rates include several of Taira's adjustments according to what we believe is the more appropriate context.

Current BLS method

Since the early 1960's, the Bureau of Labor Statistics has prepared and published adjusted unemployment rates approximating U.S. concepts for major industrial countries, including Japan.[2] Table 1 shows the annual figures for 1970–82 as reported by Japan and as adjusted by BLS to approximate U.S. concepts.

The method of adjustment is explained in detail in a 1978 bulletin, *International Comparisons of Unemployment*.[3] The bulletin outlines several differences between U.S. and Japanese unemployment concepts, but the Bureau made no adjustments because relevant data were not then available. It noted that Japan's method of computing unemployment "results in a slight understatement of Japanese unemployment under U.S. concepts."[4]

Since that bulletin was published, data from Japan's 1977–1980 special March surveys have become available, making it possible, to some extent, to quantify the differences between Japanese and U.S. unemployment concepts. However, the March survey results have not been incorporated into the BLS adjustment method. There are several reasons for this. First, the data are ambiguous in many respects and, therefore, subject to different interpretations. Second, the fact that they are for an atypical month of the year requires caution in their use. Third, the relevant data are available only for the period 1977 through 1980. Special March surveys were conducted before 1977 and after 1980, but these surveys used somewhat different questionnaires and the information required for adjustments was not collected. And finally, because the BLS analysis of the March surveys for 1977–80 shows that the Japanese unemployment rate is, at most, understated by only 0.1 to 0.4 percentage point, it was decided that the official Japanese unemployment figures provided a good enough basis for international comparisons. The following tabulation shows the official Japanese unemployment rates as published by Japan and as adjusted by Taira and BLS to approximate U.S. concepts and rates for the United States, March 1977–80, including Armed Forces (the data are not seasonally adjusted):

Year	*Official rates*	*Taira method*	BLS *method*	*United States*
1977	2.4	4.2	2.8	7.8
1978	2.6	4.7	3.0	6.5
1979	2.5	4.5	2.7	6.0
1980	2.2	3.8	2.3	6.5

Table 1. Japanese unemployments rates, official and adjusted by BLS to approximate U.S. concepts, 1970–82

[In percent]

Year	Official rates	Adjusted rates, based on	
		Total labor force	Civilian labor force
1970	1.1	1.2	1.2
1971	1.2	1.2	1.3
1972	1.4	1.4	1.4
1973	1.3	1.3	1.3
1974	1.4	1.4	1.4
1975	1.9	1.9	1.9
1976	2.0	2.0	2.0
1977	2.0	2.0	2.0
1978	2.2	2.3	2.3
1979	2.1	2.1	2.1
1980	2.0	2.0	2.0
1981	2.2	2.2	2.2
1982	2.4	2.4	2.4

Note: Official rates are on a total labor force basis (including Armed Forces).

Whether the Japanese rate is 2.4 or 2.8 percent, it is still far lower than in most of the other industrial countries.

BLS makes two adjustments in the official Japanese labor force to put it on a U.S. basis: (1) unpaid family workers[5] who worked fewer than 15 hours (about 500,000) are subtracted because such workers are excluded from the U.S. labor force; and (2) for comparisons of civilian unemployment rates, the National Defense Force (about 240,000) is subtracted from the Japanese labor force. These adjustments have very little effect, raising the official unemployment rate by only 0.1 percentage point in a few years.

U.S. and Japanese surveys compared

Until 1967, the Japanese survey closely paralleled the U.S. Current Population Survey. That year, the CPS was revised so that more specific questions on labor force status were asked, and a 4-week time period was specified for jobseeking activity on the part of unemployed persons.[6] No such questions have been added to the regular Japanese survey.

In the United States, an enumerator visits a home during the survey week, asks a series of questions, and fills out the survey form. In contrast, the enumerator in Japan visits the sample household prior to the survey week and leaves the survey form for the respondent to complete. At the end of the survey week, the enumerator visits the household again and collects the questionnaire, checking over the entries at that time.

Unemployment. The unemployed in the monthly Japanese survey are defined as all persons 15 years of age or over who did not work at all in the reference week and who were seeking work or awaiting the results of previous employment applications.

The Japanese questionnaire lists the following answers to the question "Was this person engaged in work at all during the survey week?"

1. Engaged mainly in work
2. Engaged partly in work besides attending school
3. Engaged partly in work besides home duties, etc.
4. Had a job but did not work

5. Had no job but seeking one
6. Attending school
7. Engaged in home duties
8. Other

Persons checking response number 5—"had no job but seeking one"—are classified as unemployed. This response is defined in the survey explanatory notes: "Refers to the person who had no job but was actually seeking work by answering advertisements in the newspaper, applying at the Public Employment Security Office, etc. Also refers to the person who is waiting for an answer to an application and is able to take up a job immediately after he finds one."

The Japanese definition of unemployment appears to be more restrictive than the U.S. definition. Excluded from the unemployed in Japan, but included in the United States, are:

- Persons on layoff who were waiting to return to their jobs
- Temporarily ill jobseekers who were not in a condition to begin work immediately
- Persons who were actively seeking work in the past 4 weeks, but who took no active steps in the survey week and were not awaiting the results of a previous job application
- Persons without a job and waiting to report to a new job within 30 days. (In the United States, there is no direct question on this point, but those who volunteer the information that they are waiting to start a new job in 30 days are classified as unemployed).

However, there are persons classified as unemployed in Japan who would be considered "not in the labor force" in the United States. The Japanese definition does not require active workseeking within the past 4 weeks for classification as unemployed. Such active workseeking is required in the U.S. survey, except for persons on layoff who are awaiting recall and persons waiting to begin a new job. Because these latter two groups are not within the Japanese concept of unemployment, all of the reported Japanese unemployed would be subject to the "workseeking in the past 4 weeks" criterion for comparability with U.S. concepts.

Labor force. There are several differences between U.S. and Japanese concepts of the labor force. The Japanese labor force consists of all persons age 15 and over who worked, had a job but did not work, or were seeking work in the reference week. As noted, Japan includes and the United States excludes unpaid family workers who worked less than 15 hours in the survey week. The number of such persons is regularly reported in the Japanese survey. Persons with a paid job but not at work during the survey week are in the U.S. labor force whether or not they receive pay for the time off; in Japan, these workers must have received pay to be considered in the labor force (however, we do not adjust for this because Japanese employees normally receive pay when absent from work).

The Armed Forces are included in the U.S. definition of the labor force, effective beginning in January 1983. The Japanese labor force also includes military personnel. Japan includes and the United States excludes inmates of institutions in the survey universe. However, Japan classifies nearly all inmates as not in the labor force. Again, no adjustment is necessary. A number of unemployed persons officially classified as "not in the labor force"—such as those waiting to start a new job—should also be added to the Japanese labor force for comparability with U.S. concepts. However, some of the officially unemployed should be subtracted. The special March surveys provide these data.

The special March surveys

To supplement the regular monthly labor force survey, the Japanese conduct special surveys each March which probe deeper into the labor force status of the population than do the regular monthly surveys. These special surveys provide much greater detail concerning the conditions of unemployment and underemployment, reasons for unemployment, jobseeking activities, and time of last job search. Employed persons are questioned on their desire to change jobs, and short-time workers are asked about their desire for more work. The special surveys also delve into the job desires of persons classified as "not in the labor force."

Reference periods and definitions are identical in both the special surveys and the regular surveys. Both are self-enumerations. The sample size of the March surveys was half that of the regular surveys until 1980 when the size was increased to about seven-eights that of the regular survey. The surveys refer to the week ending March 31.

Results of the special surveys for 1977 through 1980 can be used to analyze the magnitude of the differences between U.S. and Japanese unemployment concepts. However, the results do not allow for a complete and unambiguous adjustment of Japanese unemployment to U.S. concepts.

March: a most unusual month. March is a time of extensive churning in an ordinarily calm labor market. The Japanese fiscal year begins on April 1. New hiring of permanent staff by Japanese firms traditionally occurs in the month or two prior to the beginning of the fiscal year, to be effective April 1.[7] In addition, graduation from junior and senior high schools and colleges occurs in the late February to early March period. The new school graduates receive and accept job offers several months before leaving school.[8] This practice of job prearrangement is one of the reasons Japan maintains very low levels of youth unemployment compared with other countries where youth often do not prearrange their job before leaving school (when they would not be classified as unemployed because they are not currently available for work). With graduation generally occurring in early March, there is a period of a few weeks when the school graduates are waiting to begin their new jobs. This explains why the March surveys report a very large number of persons waiting to begin new jobs—they are mainly new school graduates. The March figures also include other persons who have been hired to report at the beginning of the fiscal year. In no other month but March would a similar situation occur.

Labor turnover data by month for 1977 through 1980 show that both accessions and separations are at yearly highs in April—the accession rate is more than 3 times as high as the annual average; the separation rate is nearly twice as high. (See table 2.) Clearly, April is the month in which labor turnover peaks and March is the month when the number of persons waiting to begin a new job is the highest.

Also, Japanese monthly unemployment rates for 1977 through 1980 show March as the high month for unemployment. (See table 3.) Seasonal adjustment lowers the March figures by 0.3 to 0.4 percentage point—a larger seasonal adjustment than for any other month.

Because of the extensive hiring which occurs in March, the special surveys most likely record larger than usual numbers of persons who are classified as "not in the labor force" but who tested the job market that month. These persons report in the March surveys that they had looked for work earlier in the month, although not in the survey week (the week ending March 31), and that they are available for work. Many of them become discouraged and give up jobseeking by the time of the survey week. Because they sought work during the month and were available for work, they would be classified as unemployed under U.S. concepts. However, their numbers are probably at a seasonal high in March. They are attracted into the labor force by the prospect of hiring for the beginning of the fiscal year. In other months, when hiring falls to more normal levels, the number of such jobseekers would also fall.

Table 2. Labor turnover in Japan by month, annual averages, 1977–80

[Per 100 employees]

Month	1977		1978		1979		1980	
	Accessions	Separations	Accessions	Separations	Accessions	Separations	Accessions	Separations
January	1.0	1.6	1.0	1.7	.9	1.6	.9	1.7
February	1.2	1.5	1.1	1.5	1.0	1.4	1.3	1.4
March	1.9	1.8	1.7	1.8	1.7	1.7	1.8	1.8
April	5.4	3.0	5.1	3.0	5.1	2.8	5.7	3.1
May	1.4	1.7	1.3	1.7	1.6	1.7	1.5	1.7
June	1.2	1.4	1.1	1.3	1.3	1.4	1.2	1.3
July	1.1	1.4	1.1	1.3	1.2	1.4	1.2	1.3
August	1.0	1.5	.9	1.3	1.1	1.5	1.1	1.4
September	1.2	1.5	1.1	1.4	1.3	1.4	1.2	1.4
October	1.3	1.5	1.2	1.4	1.4	1.5	1.3	1.4
November	1.1	1.2	1.1	1.1	1.3	1.1	1.2	1.1
December	.9	1.3	.9	1.1	.9	1.2	.9	1.3
Annual average	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.6
April as percent of annual average	338	188	340	188	319	175	356	194

NOTE: Data are for establishments with 30 employees or more in the industrial and service sectors.

SOURCE: Japanese Ministry of Labour, *Yearbook of Labour Statistics*, 1977 through 1980 editions.

Table 3. Original and seasonally adjusted unemployment rates in Japan, annual averages, 1977–80

[In percent]

Month	1977		1978		1979		1980	
	Original	Seasonally adjusted	Original	Seasonally adjusted	Original	Seasonally adjusted	Original	Seasonally adjusted
January	2.2	1.9	2.4	2.1	2.3	2.1	2.1	1.9
February	2.3	2.0	2.5	2.2	2.2	2.0	2.0	1.9
March	2.4	2.0	2.6	2.2	2.5	2.1	2.2	1.9
April	1.9	1.9	2.2	2.2	2.2	2.2	2.1	2.0
May	2.0	2.1	2.2	2.3	2.0	2.0	1.9	2.0
June	2.0	2.1	2.2	2.3	1.9	2.1	1.8	2.0
July	1.9	2.1	2.1	2.2	2.0	2.2	1.9	2.1
August	1.9	2.0	2.2	2.3	2.1	2.1	2.0	2.1
September	1.9	2.0	2.2	2.4	1.9	2.0	1.9	2.0
October	1.8	1.9	2.1	2.2	2.0	2.1	2.0	2.1
November	1.9	2.0	2.1	2.2	2.0	2.1	2.1	2.2
December	2.1	2.1	2.1	2.2	1.9	2.0	2.1	2.2
Annual average	2.0	—	2.2	—	2.1	—	2.0	—

SOURCE: Prime Minister's Office, Statistics Bureau, *Annual Report on the Labour Force Survey*, 1980, p. 188.

It is difficult to draw conclusions from Japanese labor force data which are available only for March. (Unfortunately, the special surveys have not been conducted at any other time of the year.)[9] Only inferences can be made about what the March special surveys would show in a more typical month or on an annual average basis. In the following section, BLS takes into account the timing of the special surveys and makes some estimates which put the results on a more typical basis. In several instances, however, results are presented as "upper limits" because relevant data are not available on a typical basis.

Adjustment to U.S. concepts

The BLS method of adjusting the special March surveys to U.S. concepts is compared with the Taira method in table 4. There are four adjustments with regard to Japanese unemployment. The first, "inactive jobseekers" (Taira calls them "non-unemployed"), are subtracted from the Japanese unemployed count by both BLS and Taira, but the BLS adjustment is larger. The second and third, "jobseekers not in the labor force" (termed "job search in March and currently available for work" by Taira) and "persons waiting to begin new jobs," are added to the unemployed under both methods, but the BLS adjustments are smaller. The fourth adjustment, persons on temporary layoff (termed "layoffs, employed but closed down" by Taira) are added to the Japanese unemployed by Taira but not by BLS.

Both the BLS and Taira adjustments are presented on a "total labor force" basis which includes the Armed Forces. (The adjusted rates on a civilian basis are virtually the same as the rates using the total labor force concept because the Japanese National Defense Force is relatively small.)

Both BLS and Taira exclude unpaid family workers who worked less than 15 hours. However, the figures differ somewhat because BLS's figures are based on "actual status," while Taira's are based on "usual status." The "actual status" figures were used because they conform to the U.S. concept of employment. Furthermore, they are generally closer to the annual average number of unpaid family workers working less than 15 hours than the "usual status" figures. The size of the labor force is also affected by how many persons "not in the labor force" are reclassified as unemployed and how many unemployed are reclassified as "not in the labor force." (See table 4.)

Inactive jobseekers. These are persons who are reported as unemployed in Japan but who did not actively seek work during the month.

In the March special surveys, unemployed persons in Japan were asked the following question: "When did you last request or apply?" Accompanying this question are the instructions "include inquiring or demanding the result." There are three possible responses: (1) within this week; (2) in March; and (3) February or earlier. Thus, it is possible to determine the number of persons reported as unemployed in March whose last active search for work was prior to that month. There are a large number of such persons, amounting to more than 40 percent of the reported number of unemployed each March.

The explanation for the large number of inactive workseekers in Japan is that the survey questionnaire contains the instruction that unemployed persons may include those awaiting answers to applications for employment. Thus, persons who made their last request or application for work over 1 month ago but are still awaiting the answer (and did not inquire about it) may count themselves as unemployed.

According to the March special surveys, nearly 30 percent of the "inactive workseekers" listed their major job search method as applying to the Public Employment Service. Another 30 percent applied to employers or made requests with schools or acquaintances. Taira and BLS agree that these two groups—accounting for 60 percent of the "inactive jobseekers"—should be excluded from the Japanese unemployment count on the grounds that they did not take active steps to find work in March. However, Taira does not exclude the remaining persons who responded that their main search method was to (1) study want ads or consult with acquaintances; (2) prepare to start a business; or (3) other.

BLS disagrees with Taira's inclusion of these remaining groups in the unemployed. These persons neither took an active step to find work nor checked on any previous applications during the month. U.S. concepts require *specific* jobseeking activity within the past 4 weeks. Studying want ads in the newspaper is not sufficient; the actual placement or answering of an ad is required to be counted as unemployed. Checking with friends or relatives is considered as active jobseeking in the U.S. survey if such checking was done in the past 4 weeks. Those Japanese who "consulted with acquaintances" should also be held to the "past 4

Table 4. Adjustments of Japanese unemployment and labor force data to approximate U.S. concepts, March 1977–80

[Numbers in thousands]

Category	1977		1978		1979		1980	
	Taira	BLS	Taira	BLS	Taira	BLS	Taira	BLS
Reported unemployed	1,270	1,270	1,410	1,410	1,350	1,350	1,240	1,240
Less inactive jobseekers[1]	330	520	420	640	370	600	310	540
Plus jobseekers not in labor force who intended to start work immediately[2]	510	510	580	580	490	490	430	430
Less those not available due to housework or school	—	50	—	60	—	70	—	80
Plus persons waiting to begin a new job within 1 month	740	740	860	860	880	880	740	740
Less new school graduates	—	[3]440	—	520	—	560	—	550
Adjusted unemployed I	—	1,510	—	1,630	—	1,490	2,100	1,240
Plus layoffs[4]	100	100	140	140	140	140	([5])	([5])
Adjusted unemployed II	2,290	1,610	2,570	1,770	2,490	1,630	([5])	([5])
Reported labor force	53,430	53,430	54,240	54,240	54,770	54,770	55,370	55,370
Less family workers working less than 15 hours[6]	400	510	580	480	490	480	760	570
Less inactive jobseekers	330	520	420	640	370	600	310	540
Plus unemployed classified "not in labor force"[7]	1,250	760	1,440	860	1,370	740	1,170	540
Adjusted labor force	53,950	53,160	54,680	53,980	55,280	54,430	55,470	54,800
Unemployment rates:								
Reported	2.4	2.4	2.6	2.6	2.5	2.5	2.2	2.2
Adjustment I	—	2.8	—	3.0	—	2.7	3.79	2.3
Adjustment II (including layoffs)	4.24	3.0	4.70	3.3	4.50	3.0	([5])	([5])

[1] Taira terms them "non-unemployed."

[2] Or "jobsearch in March and currently available."

[3] Estimated by BLS based on March 1978 proportions.

[4] Or "layoffs, employed but closed down."

[5] Not available.

[6] Taira's data are "usual status;" BLS's data are "actual status."

[7] Sum of jobseekers not in labor force and persons waiting to begin a new job (BLS figures are net).

NOTE: Dashes indicate no adjustment.

SOURCE: Professor Taira's data appeared in Koji Taira, "Japan's low unemployment: economic miracle or statistical artifact?", *Monthly Labor Review*, July 1983, p. 6.

weeks" test.

Thus, the BLS adjustment to exclude "inactive workseekers" is higher than Taira's: 540,000 in March 1980, compared with Taira's 310,000.

Jobseekers not in the labor force. These are persons reported as "not in the labor force" who after further questioning reveal that they have sought work in the past 4 weeks and intend to begin work immediately. The BLS adjustment for these jobseekers is smaller than Taira's because BLS excludes persons who said they intended to begin work immediately but who were not available during the survey week because of housekeeping or school.

In the March special surveys, persons not in the labor force are asked the following probing questions:

a. Do you wish to do any work? (Question 8)
b. Do you intend to take up a job immediately if you find one? (Question 8a)
c. Why are you not now seeking a job despite your intention of taking up one? (Question 8b)
d. Have you been to the Public Employment Security Office, applied to other organizations, or consulted with acquaintances for a job this month? (Question 8c)

Responses to these questions show that a substantial number of persons classified as "not in the labor force" were actively seeking work during the month and currently available for work. The reason for this is the wording of the survey questionaire. Persons who regard themselves as mainly keeping house, going to school, or retired may check such responses rather than "seeking a job," even though they have also actively looked for work. This possibility is even more likely if the workseeking occurred earlier in the month rather than in the survey week, because the original question specifies "the survey week."

This entire section of the special survey is ambiguous. The ambiguities involve subtleties of translation as well as interpretation by respondents. Among those who said they "intend to take up a job immediately" in answer to item *b* are a number who respond that they are "unable to take up a job due to housekeeping or school" in answer to item *c*. The apparent explanation is that these persons would like to take up a job even though they cannot do so in the survey week.[10]

For an adjustment to U.S. concepts, it appears that some persons classified as "not in the labor force" should be added to the Japanese unemployment count. Taira adds all of those who said they looked for work in the month and intended to take it up immediately. At the least, BLS believes that those who were "unable to take up a job due to housework or school" should be subtracted from this adjustment because they were not currently available during the survey week. Hence, BLS's adjustment for this category is lower than Taira's, but even this reduced figure may be overstated. Because March is the traditional hiring period for Japanese firms, it is likely that a number of persons tested the job market in March and withdrew the following month after they found that there was no work available "near home" or "meeting their ability," and so forth. Thus, although these people were unemployed under U.S. concepts in March, they are probably not representative of the average number of such persons over the course of the year. Some further downward adjustment seems warranted, but none is made in table 4 because of the lack of relevant data.

Persons waiting to begin a new job. These are persons classified as "not in the labor force" who, after further questioning, say they expect to start work within 1 month. Taira adds all of these persons to the unemployed; BLS adds only a portion of them, adjusting for the overstatement which results from the end of Japan's school year.

Under Taira's adjustment, the number of persons waiting to begin a new job accounts for 35 percent of his adjusted unemployed. In relation to results for other countries, this proportion is unusually high. In the United States, Canada, and France such persons make up only about 2 to 5 percent of the unemployed.[11]

In the U.S. survey, persons waiting to begin a new job within 30 days are classified as unemployed if they are available to begin work immediately. The reasoning behind this is that, in many cases, the anticipated job does not materialize, and the waiting period actually represents the beginning or continuation of a period of unemployment.

In the regular Japanese monthly survey, no mention is made of the labor force classification of persons waiting to begin a new job. They are most likely enumerated as not in the labor force.

The special surveys elicit information on such persons in the question "Do you wish to do any work?" which is asked of all persons classified as not in the labor force. The possible responses to this question are as follows:

- Yes, if there is any
- Yes, if conditions are favorable
- A job is already available
  - to start within one month:
    - after graduation in March
    - other
  - to start after one month

The March surveys record a substantial number of persons who respond that a job was available within 1 month. The great majority are young persons who check "after graduation in March." There is nothing in the survey to indicate that these school graduates wanted to begin work or were even available to begin work earlier than April 1. In general, new graduates are not interested in beginning work any sooner than April 1. They generally travel during their last school vacation. Although graduation ceremonies are over, they are formally registered as students at school until March 31. Moreover, it is highly unlikely that there would be any of these school graduates in the "waiting to start a new job" category during any other month of the year.

The U.S. rationale for counting such persons as unemployed seems inapplicable to Japan, where, as Taira points out, job promises to school graduates are very firm, and cancellation of such promises is rare. Data on placement activities by Japanese employment offices indicate that in March 1977 through March 1980, there were virtually two job openings for every school-leaver applicant, and more than 99 percent of them were placed in jobs.[12]

Thus, it appears reasonable to omit the school graduates from the upward adjustment of the unemployed for three reasons: (1) they are probably not available for work prior to April 1; (2) they would not be included in the count in any month but March; and (3) there is hardly any chance that the jobs they are waiting to start will disappear.

Of the 740,000 persons "waiting to begin a new job within 1 month" in March 1980, 550,000 were school graduates. BLS has omitted the school graduates from the upward adjustment of Japanese unemployment. This leaves 190,000 persons who were not school leavers in March who were also waiting to begin new jobs. Such persons are probably slightly more open to the risk of their prospective jobs being canceled, although the risk would still be rather low. If included in the Japanese adjusted unemployed, they make up 15 to 20 percent of the total. As mentioned previously, such persons typically account for only 2 percent of U.S. unemployment.

The number of nonschool-leavers who are waiting to begin a new job in March is most likely inflated in terms of an annual average because April is the traditional hiring month in Japan. BLS includes all of them in the adjustment shown in table 4, with the reservation that they represent an upper limit for this adjustment.

Persons on layoff. Taira makes an adjustment to include persons on layoff in the Japanese unemployment count on the grounds that such persons are included in the U.S. concept of unemployment. Persons without work and awaiting recall to their former jobs are included in the U.S. unemployed, whether or not they were actively seeking work. However, the two countries' concepts and practices of "layoff" are so different that BLS believes no adjustment is warranted.[13] The reason for this is the overriding difference in job attachment. Persons awaiting recall are appropriately counted as unemployed in the United States because they are "jobless"—they are no longer on the firm's payroll, many are actively seeking work, and most are collecting unemployment benefits. By contrast, in Japan persons on layoff have work contracts or otherwise strong informal commitments from their employers and continue to receive their pay (partly subsidized through government payments to the firm), they do not seek other work, and they answer surveys to the effect that they have a job.

The BLS exclusion of persons on layoff from the Japanese unemployed is in accord with the recommendations of the International Labour Organization's 1982 Conference of Labour Statisticians.[14] In its revised standard definitions of employment and unemployment, the ILO takes into consideration the question of formal job attachment. Under the ILO standards, persons on temporary layoff are classified as employed if they have a formal job attachment (as determined by receipt of wages or salary or other factors). Persons on layoff with no formal job attachment are classified as unemployed.

BLS recognizes that persons on layoff represent a form of labor underutilization in all countries, whether they are classified as employed or unemployed. To enhance international comparisons of how labor markets are functioning, it would be desirable to measure and compare total labor slack—that is, unemployment, workers on layoff, workers on part time for economic reasons, and discouraged workers.

The special labor force surveys for March 1977 through March 1979 provide data on the number of Japanese classified as "employed, with a job but not at work" who were on temporary layoff. The category was dropped from the special surveys in 1980 on the grounds that it was inapplicable to the Japanese situation. Taira adds the persons on layoff to the Japanese unemployed count. Although BLS believes they should not be added, an alternative adjustment (II) is constructed in table 4 which includes these persons in the unemployed.

The outcome. The BLS adjusted rates are considerably lower than Taira's rates.[15] The largest adjustments are for 1977 and 1978, when the published Japanese jobless rates are increased by 0.4 percentage point by BLS. In 1979, the increase is 0.2 and in 1980, 0.1. It should be emphasized that these include "upper limit" adjustments in two cases—persons waiting to begin a new job and jobseekers "not in the labor force." Inclusion of persons on layoff raises the Japanese rate by another 0.2 to 0.3 percentage point.

The BLS estimates are considerably below the levels estimated by Taira even if persons on layoff are included. This is mainly because BLS has made adjustments to put the March surveys on a more typical basis by excluding the new school graduates who were waiting to take up their jobs. Taira's method has the effect of using the March surveys as representative of the Japanese labor market over the course of the year. Such an approach would be similar to using unadjusted data from a seasonally high unemployment month for the United States—such as June when students flood the labor market—and presenting them as our typical labor market situation for comparison with average annual activities in other countries.

Unemployment rate double for women

Although the overall Japanese unemployment rate is changed only slightly in our view when the March survey data are adjusted to U.S. concepts, there is a marked difference in the adjusted unemployment rates for men and women. The conventional Japanese data by sex show virtually no difference between the unemployment rates for men and women. According to the BLS method, the male-female differential is about the same as that obtained by Taira: the female rates are about double the male rates. The following tabulation shows unemployment rates for men and women, March 1977–80 (based on the civilian labor force, excluding layoffs):

Period	*As published* Men	*As published* Women	*Approximating U.S. concepts* Men	*Approximating U.S. concepts* Women
1977	2.4	2.3	2.0	4.3
1978	2.7	2.4	2.2	4.3
1979	2.5	2.4	1.9	4.1
1980	2.2	2.3	1.7	3.3

Thus, the Japanese situation appears more like Western countries where women usually have higher unemployment rates than men.

The reason for the wide male-female differential for Japan after the adjustment is made is that women account for the great majority of jobseekers classified as not in the labor force, while men account for most of the reported unemployed who did not actively seek work in the month of the survey.

Why is Japanese unemployment low?

Japanese unemployment rates are very low whether U.S. or Japanese concepts are used. The low Japanese jobless rates reflect, in part, the fundamental differences between the Japanese economic system and culture and those of the industrialized Western nations. Difference in labor force mix are also significant.

Lifetime employment system. Under Japan's "lifetime employment system," regular, full-time workers (mostly men) are shielded from unemployment. During periods of economic difficulties, companies refrain as much as possible from laying off or dismissing their regular workers. For example, during the 1974–75 recession and the slow-growth years of the 1980's, hundreds of thousands of unneeded workers were kept on company payrolls, with subsidies provided by the government. These workers were often moved into jobs in different plants within the same firm or even lent to other firms.[16]

Japanese corporations, labor, and the government cooperate to an unusual degree. This cooperation is partly attributable to the broad social role assumed by Japanese corporations which provide a wide range of social services, including housing or financial help with mortgage payments, recreational facilities, and even wedding halls in which employees are married. Labor often accedes to wage and other concessions during economic difficulties. In this social context, the Japanese responses to recession can be understood.

Table 5. Expanded unemployment measures for the United States and Japan, 1980

[Numbers in thousands]

Category	United States (1980)	Japan (March 1980)
Unemployed		
Total, U.S. standard definition	7,637	1,240
Full-time jobseekers	6,269	[1]740
Part-time jobseekers	1,368	[1]500
Half	685	250
Part-time for economic reasons	4,321	1,920
Reduced hours	4,321	[2]1,790
Half	2,161	900
Zero hours	([3])	[4]130
U–6 numerator[5]	9,115	2,020
Plus discouraged workers	994	1,100
U–7 numerator	10,109	3,120
Civilian labor force		
Total, U.S. standard definition	106,940	54,560
Full-time labor force	91,296	46,740
Part-time labor force	15,644	7,820
Half	7,822	3,910
U–6 denominator[6]	99,118	50,650
U–7 denominator[7]	100,112	51,750
Unemployment rates (percent)		
U–5: U.S. standard definition	7.1	2.3
U–6: Total full-time jobseekers plus ½ part-time jobseekers plus ½ total on part-time for economic reasons[8] as a percent of the civilian labor force less ½ of the part-time labor force	9.2	4.0
U–7: U–6 plus discouraged workers in numerator and denominator	10.1	6.0

[1] Breakdown into full-time and part-time jobseekers partially estimated.

[2] Includes reported number of persons usually working part time who want more work (1,530,000) plus estimated number of persons usually working full-time who were on reduced (but not zero) hours (260,000).

[3] Included in U.S. standard definition.

[4] Not reported in March 1980 survey. Figure shown is estimated based on March 1979 proportion.

[5] All full-time jobseekers plus one-half part-time jobseekers plus one-half on reduced hours for economic reasons plus all on zero hours for economic reasons.

[6] Civilian labor force less one-half the part-time labor force.

[7] U–6 denominator plus discouraged workers.

[8] Japanese workers on "zero hours" are given full weight.

Nonregular workers. But what happens to employees who are not regular workers? There is a large segment of part-time, temporary, and seasonal workers—mostly women and "retired" older workers—who tend to bear the brunt of downturns because they do not come under "lifetime employment." These workers provide a degree of flexibility for Japanese firms, allowing them to accord more permanent status to their regular employees. As Taira points out, these "nonregular" workers tend to bypass unemployment status, moving from employment to "not in the labor force" when the economy slackens, and then back to employment when the economy improves. While they are out of the labor force, they are usually supported by their families. However, many do show up as unemployed—the jobseekers not in the labor force in the more probing March survey.

There is indirect evidence of this "hidden" type of employment in Japan's labor force data. For example, participation rates for women fell off sharply in 1974–75, but their unemployment rates rose only slightly. In the more recent slow growth period, however, female participation stabilized and even moved upward, as women joined the labor force to supplement family income (among other reasons).[17] This was more in line with the U.S. situation, where women continue to flow into the labor market during recessions.

Labor force mix. Besides the social and cultural factors, other elements in Japan promote low unemployment rates *vis-a-vis* the United States. For instance, the higher proportion of workers in the agricultural sector in Japan means that a larger segment of the Japanese labor force is practically immune to unemployment. Agricultural workers may be underemployed but they are not as subject to unemployment as are industrial workers because they usually spend some hours at work each week. Also, the higher share of self-employed and unpaid family workers in the Japanese labor force has a similar effect. Furthermore, the share of youth in the labor force is much smaller in Japan than in the United States. (In all developed countries, including Japan, youth under the age of 25 have higher unemployment rates than adults.) Moreover, young workers in the United States tend to change jobs much more often than their Japanese counterparts, further increasing the unemployment differential between the two countries.

An expanded unemployment concept

International comparisons of conventionally defined unemployment rates should be understood for what they measure—they compare the proportion of the labor force in each country which is without work, available for work, and actively seeking work. As such, they measure an important part of labor market health. But they do not show the entire picture.

Is the efficiency of the Japanese labor market really 3 to 5 times better than that of the Western nations? A strict comparison of unemployment rates would arrive at that misleading conclusion. However, we have noted that a substantial part of Japan's labor underutilization falls into the realm of underemployment (workers on reduced hours, "temporary layoffs") and discouragement, or labor force withdrawal. These forms of labor slack do not show up in the conventional unemployment rate.

A useful international comparison to supplement comparisons of conventionally defined unemployment could be made if the unemployment concept were expanded to encompass these other types of labor underutilization. In the United States, such measures exist within the unemployment measures designated U-1 to U-7.[18] These monthly measures include the official unemployment rate U-5. While U-1 to U-4 represent narrower measures of unemployment, U-6 and U-7 represent expanded concepts. U-6 incorporates persons on part-time schedules for economic reasons and U-7 brings in discouraged workers as well.

Table 5 shows a comparison of U-6 and U-7 for the United States and Japan. Data from the March 1980 special survey are used for Japan; annual 1980 data are shown for the United States. The Japanese figures should be viewed as only approximate indicators of U-6 and U-7 because they are partly estimated. One problem is that the March survey does not give a comprehensive count of persons on part time for economic reasons. The survey reports that of all persons usually working fewer than 35 hours, 1.53 million wished to work more hours. This is a good indicator of the number of persons on part time for economic reasons who usually work part time. However, the number of persons usually working full time who were on part time for economic reasons is not fully available. The number on "zero hours," or with no work at all during the week is reported in the March 1977 through 1979 surveys, but not in the March 1980 survey. We can estimate the March 1980 figure at 130,000, based on the March 1979 proportion. There must be a considerable number of other normally full-time workers on reduced hours, but they are not enumerated in the survey. For purposes of this comparison, we have doubled the number on "zero hours," to 260,000 persons.[19]

In the March 1980 survey, respondents not in the labor force who desired work and were available, but who did not look for work during the month, were asked why they were not seeking jobs now. Those responding "not likely to find work" are close to the U.S. concept of discouraged workers. Also within this concept are the "inactive jobseekers" who were excluded from the Japanese unemployed under U.S. concepts. This group has been added to U-7.

A comparison of the U-6 and U-7 rates in relation to the conventionally defined rates shows that the Japanese "expanded concept" rates are increased to a greater degree than the U.S. U-6 and U-7 rates. In other words, there is a convergence in the "unemployment rates" for the two countries when the definition is broadened. Under the conventional definition, the U.S. rate is triple the Japanese rate. Expanding the concept to U-6, the U.S. rate is around 2.3 times the Japanese rate. Defining unemployment even more broadly to encompass discouraged workers (U-7), the U.S. rate falls to 1.7 times the Japanese rate similarly defined.

Miracle or artifact?

The answer to Taira's question—is Japan's low unemployment an economic miracle or a statistical artifact?—is that it is neither. Although the Japanese definition of unemployment is somewhat more restrictive than the U.S. definition, the regular monthly survey gives a close approximation of the rate of unemployment under U.S. concepts. Since the monthly survey understates some groups and overstates others, the differences tend to cancel out, with a slight upward adjustment remaining. However, the Japanese labor force survey is misleading when it comes to measuring women's unemployment. Based on the March surveys, there is a wide differential between men's and women's unemployment which is not apparent from the regular monthly survey. But Japanese unemployment rates are still extremely low by Western standards, both for men and for women.

Then, are these low Japanese rates an economic miracle? The answer here is also "no." Jobless rates must be understood for what they are—only partial measures of total labor slack. Expanding the unemployment concept to include other elements of labor slack—economic part-time and discouraged workers—draws the Japanese rate closer to U.S. levels. The explanations for the remaining differential lie in such differences as the composition of the labor force, levels of frictional unemployment, and economic growth rates. ☐

——FOOTNOTES——

[1] Koji Taira, "Japan's low unemployment: economic miracle or statistical artifact?" *Monthly Labor Review*, July 1983, pp. 3–10. See also Henry Scott Stokes, "Jobless Rate Reaches a High for Japan," *New York Times*, March 9, 1983, p. D–9; Jon Woronoff, "There is Unemployment in Japan," *The Oriental Economist*, November 1981, pp. 40–43. See also Woronoff's book *Japan's Wasted Workers* (Totowa, N.J., Allenheld, Osmun and Co., 1983).

[2] For example, see Joyanna Moy, "Recent labor market developments in the U.S. and 9 other countries," *Monthly Labor Review*, January 1984, pp. 44–51.

[3] *International Comparisons of Unemployment*, Bulletin 1979 (Bureau of Labor Statistics, 1978), pp. 80–85.

[4] *International Comparisons of Unemployment*, p. 85.

[5] In the Japanese survey definition of "family workers," the term "unpaid" was dropped in 1981. Now "family workers" are defined as "persons who work in an unincorporated enterprise operated by a member of the family." Because of Japanese tax laws which allow a family business or farm more favorable tax treatment if they report wages or salaries of family workers, most are reported as "paid" for tax purposes. However, Japanese statisticians believe that there is no significant difference between paid and unpaid family workers and no such distinction is made in the survey statistics. The tax deductions do not necessarily mean that compensation was in fact paid.

[6] See Robert L. Stein, "New Definitions for Employment and Unemployment," *Employment and Earnings*, February 1967, pp. 3–13.

[7] Based on a communication with the U.S. Embassy in Tokyo, February 1979.

[8] *Youth Unemployment: An International Perspective*, Bulletin 2098 (Bureau of Labor Statistics, September 1981), p. 24.

[9] Employment Status Surveys are conducted every 2 or 3 years in October, but they are not helpful here in that they show "usual status" rather than "actual status" and they obtain no information on persons without a job and desiring work.

[10] Based on consultations with Japanese statisticians, the analysis of the U.S. Embassy in Tokyo concluded that the whole series of questions noted as items "a" through "d" in the text, suffers from some ambiguity with respect to the words "wish" and "intend." "Intent" is perceived within the overall context of a wish. Thus, if conditions consistent with a person's wish arise (as to time, place, type of employment, and so forth), he or she could respond "I intend to take up a job immediately if I can find the appropriate job; since I don't see anything consistent with my wish, I am now not seeking a job in spite of my intention."

[11] There is no direct question on waiting to begin a new job in 30 days in the U.S. survey. This information must be volunteered by the respondent, which could result in some undercount of the number of persons in this category. Canada instituted a question on this point in 1976 and found the number of persons reporting that they were waiting to start a new job increased to about 5 percent of the unemployed, from around 2 percent previously.

[12] Japanese Ministry of Labour, *Yearbook of Labour Statistics*, 1977 through 1981 editions.

[13] In an earlier article, BLS described in detail the international differences in the treatment of layoffs. See Joyanna Moy and Constance Sorrentino, "Unemployment, labor force trends, and layoff practices in 10 countries," *Monthly Labor Review*, December 1981, pp. 8–11.

[14] International Labour Organization, Thirteenth International Conference of Labour Statisticians, *Report of the Conference*, Geneva, 18–29 October 1982.

[15] In a recent article, Eiji Shiraishi of the Japanese Ministry of Labor analyzed Japanese unemployment rates on a U.S. concepts basis, using the special March surveys of 1978 and 1980. He adjusted Japanese unemployment rates to U.S. concepts, arriving at 3.1 percent in March 1978 and 2.4 percent in March 1980. Both of these figures were just 0.1 percentage point above the figures obtained in the foregoing BLS analysis. Like BLS, Shiraishi did not make an adjustment for layoffs because "there is no such practice in Japan." He also was in accord with the BLS exclusion of new school graduates from the adjustment for persons waiting to begin a new job. See Eiji Shiraishi, "International Comparison of Unemployment Concepts," *Monthly Labour Statistics and Research Bulletin*, March 1982, pp. 13–20. (English translation available from BLS).

[16] For examples of Japanese employment practices see Haruo Shimada, *The Japanese Employment System*, Japanese Industrial Relations Series 6 (Tokyo, the Japan Institute of Labour, 1980); T. Shirai and others, *Contemporary Industrial Relations In Japan*, Japanese Industrial Relations Series 7 (Tokyo, the Japan Institute of Labour, 1980); Fujio John Tanaka, "Lifetime Employment in Japan," *Challenge*, July–August 1981; and Don Oberdorfer, "Japanese Soft Touch on Layoffs," *The Washington Post*, March 9, 1975, p. G–1.

[17] See Constance Sorrentino, "International comparisons of labor force participation," *Monthly Labor Review*, February 1983, pp. 27–28.

[18] See Julius Shiskin, "Employment and unemployment: the doughnut or the hole," *Monthly Labor Review*, February 1976, pp. 3–10.

[19] This is somewhat higher than a comparable ratio for the United States. Using the 1980 U.S. ratio of persons on layoff to persons who usually work full time but who are on reduced hours, the Japanese figure would be estimated as 160,000 rather than the 260,000 used here. The Japanese figure has been increased because hours reductions for economic reasons are used more frequently in Japan than in the United States, where workers are more likely to be laid off.

Foreign Labor Developments

Adjusted Japanese unemployment rate remains below 3 percent in 1987–88

CONSTANCE SORRENTINO

In addition to regular monthly labor force surveys, Japan conducts a special labor force survey each year to investigate, in more detail, the labor force status of the population. These special surveys allow for a more complete analysis of Japanese unemployment under U.S. concepts. Such analyses were presented in 1984 and 1987 articles in the *Review*, and this report updates the results to include data from the February 1987 and 1988 special surveys.[1]

Although the Bureau of Labor Statistics does not use the special survey results to adjust the overall Japanese unemployment rate to U.S. concepts, the Bureau continues to follow the surveys to better understand the results of the regular monthly surveys. The 1987 and 1988 special surveys continue to support the Bureau's contention that the Japanese unemployment rate is only slightly changed when U.S. concepts are applied. In addition, the BLS uses the special surveys for two other purposes: they allow calculation of (1) adjusted unemployment rates by sex; and (2) expanded unemployment measures which go beyond the conventional unemployment rate to cover persons involuntarily working part time and discouraged workers.

Adjustment to U.S. concepts

Several adjustments are made to the special surveys to bring them closer to U.S. concepts. After adjustment, some persons counted as unemployed in the surveys are excluded from the labor force, and some reported as not in the labor force are included among the unemployed. The magnitude of each of the adjustments is significant, but, on balance, they tend to cancel each other out, leaving the Japanese unemployment rate virtually unchanged. The adjustments are discussed in detail in the previous studies. Table 1, using the same format as the earlier analyses, shows the adjustments for February 1984 through February 1988.

In both 1987 and 1988, the adjustments to U.S. concepts result in a slightly lower unemployment rate than figures based on Japanese definitions. This was the same direction indicated by analyses of previous surveys for February. However, special surveys conducted in March 1977–80 led to a slight upward adjustment. As discussed in the previous articles, March is a highly unusual month for the Japanese labor market because it is the end of the Japanese fiscal year, when firms traditionally take on new workers, and also the end of the school year, when new graduates enter the labor market. Although February is also a month of higher than average unemployment, there is somewhat less seasonality associated with this month than with March.

Table 1. Adjustment of Japanese unemployment and labor force data to approximate U.S. concepts, February 1984–88

[Numbers in thousands]

Category	1984	1985	1986	1987	1988
Reported unemployed	1,710	1,640	1,640	1,860	1,730
Less inactive jobseekers	430	370	360	480	460
Plus jobseekers not in labor force who intended to start work immediately	130	130	120	120	140
Less those not available due to housework or school	10	10	10	10	10
Plus persons waiting to begin a new job within 1 month	1,340	1,130	1,300	1,380	1,380
Less students awaiting jobs after graduation	1,170	960	1,100	1,160	1,160
Adjusted unemployed	1,570	1,560	1,590	1,710	1,620
Reported labor force	57,240	57,880	58,400	58,770	59,640
Less family workers working less than 15 hours	560	580	500	560	570
Less inactive jobseekers	430	370	360	480	460
Plus unemployed classified "not in labor force"[1]	280	280	310	330	350
Adjusted labor force	[illegible],540	57,380	57,850	58,070	58,960
Unemployment rates:					
Reported	3.0	2.8	2.8	3.2	2.9
Adjusted to U.S. concepts	2.8	2.7	2.7	2.9	2.7

[1] Net sum of jobseekers not in labor force and persons waiting to begin a new job (less students).

NOTE: Data are on a total labor force basis.

SOURCE: Management and Coordination Agency, Japanese Statistics Bureau, Report on the Special Survey of the Labour Force Survey, February 1984–88.

The BLS comparative unemployment rates program regularly compiles unemployment rates adjusted to U.S. concepts for certain foreign countries. (See tables 45 and 46 in the "Current Labor Statistics" section of the *Review*.) For Japan, BLS does not attempt to make annual or quarterly adjustments based on the February and March special survey data. Instead, BLS accepts the published Japanese

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unemployment figures as closely comparable with U.S. concepts and makes some minor adjustments to the labor force figures. BLS adjusts the Japanese labor force figures to exclude unpaid family workers working less than 15 hours. For civilian unemployment rates, the National Defense Force is also excluded. These small adjustments to the denominator of the unemployment rate usually make no difference; on occasion they raise the annual average rate by 0.1 percentage point. (See table 2.)

Comparisons by sex

Although the overall Japanese unemployment rate is changed only slightly when the special survey data are adjusted to U.S. concepts, there is a more significant difference in the adjusted rates for men and women. The official Japanese data show virtually no difference in unemployment rates for men and women. However, according to the BLS adjustments, women have higher unemployment rates than men. (See table 3.)

Reasons for the wider male-female differential after adjustment are evident from the table. Women account for most of the unemployed originally classified as not in the labor force, while men account for most of the unemployed who did not actively seek work in the month of the survey.

An expanded unemployment concept

Japan's unemployment rates, both on the official basis and adjusted to U.S. concepts, are well below U.S. rates. Annual civilian U.S. jobless rates of 6.2 percent in 1987 and 5.5 percent in 1988 contrast with adjusted civilian Japanese rates of 3.0 percent and 2.8 percent in February of those years. Other Western nations (Canada, France, Italy, United Kingdom) had rates in the 8- to 11-percent range during the same years. (See the aforementioned tables 45 and 46 in "Current Labor Statistics.") Is the comparative efficiency of the Japanese labor market really 2 or 3 times greater than that of most Western nations? A strict comparison of unemployment rates would arrive at that misleading conclusion. However, a substantial part of Japan's labor underutilization falls in the realm of underemployment (workers on reduced hours) and discouragement, or labor force withdrawal. These forms of labor slack do not show up in the conventional unemployment rate, but they are part of the Bureau's U-1 to U-7 framework of alternative unemployment rates.[2]

Table 2. Japanese unemployment rates as published and adjusted to U.S. concepts, annual averages, 1984–1988

[In percent]

Year	As published[1]	Adjusted to U.S. concepts	
		Total labor force basis	Civilian labor force basis
1984	2.7	2.7	2.8
1985	2.6	2.6	2.6
1986	2.8	2.8	2.8
1987	2.8	2.9	2.9
1988	2.5	2.5	2.5

[1] Total labor force basis (includes National Defense Force).

Table 3. Adjustment of Japanese unemployment and labor force data to approximate U.S. concepts, for men and women, February 1987 and 1988

[Numbers in thousands]

Category	February 1987		February 1988	
	Men	Women	Men	Women
Reported unemployed	1,110	730	1,080	670
Less inactive jobseekers	330	150	310	160
Plus jobseekers not in labor force who intended to start work immediately	20	100	40	100
Less those not available due to housework or school	10	10	10	0
Plus persons waiting to begin new job within 1 month	680	700	650	730
Less students awaiting jobs after graduation	600	590	580	600
Adjusted unemployed	870	830	880	730
Reported labor force	35,700	23,070	36,110	23,530
Less family workers working less than 15 hours	50	500	50	530
Less inactive jobseekers	330	150	310	160
Plus unemployed classified "not in labor force"[1]	90	230	130	220
Adjusted labor force	35,410	22,650	35,880	23,060
Unemployment rates:				
Reported	3.1	3.3	2.9	2.8
Adjusted to U.S. concepts	2.5	3.7	2.5	3.2

[1] Net sum of jobseekers not in labor force and persons waiting to begin a new job (less students).

NOTE: Data are on a total labor force basis. Sums of the statistics for men and women may not exactly coincide with the totals on table 1 due to rounding.

SOURCE: Management and Coordination Agency, Japanese Statistics Bureau, Report on the Special Survey of the Labour Force Survey, February 1987 and February 1988.

Updating previous analyses, table 4 shows expanded unemployment measures which bring into consideration employed persons on part time for economic reasons (U-6) and discouraged workers (U-7). It was not possible to measure discouraged workers in Japan in exactly the same way as they are measured in the United States. Therefore, table 4 shows U-7 for Japan as a range rather than a precise rate. The lower rate of the range includes persons who seem to fall strictly within the U.S. concept of discouraged workers; the upper rate of the range includes some who might not be counted under the U.S. definition, but they would fall under a broader concept of labor underutilization. (See the appendix to the 1987 article for further discussion.)

Comparisons of the U-6 and U-7 rates in relation to the conventionally defined rate (U-5) show that the Japanese rates are increased to a greater degree than the U.S. conventional rates. In other words, there is a convergence in the "unemployment rates" for the two countries when the definition is broadened. In addition, the gap between each of the three rates for the United States and Japan has narrowed between 1984 and 1988, as overall labor market conditions improved in the United States, but not in Japan. The following tabulation, based on table 4, shows the ratio of the U.S. unemployment rate to the Japanese rate:

Rate	*1984*	*1985*	*1986*	*1987*	*1988*
U-5	2.7	2.7	2.5	2.1	2.0
U-6	2.1	2.0	1.9	1.7	1.7
U-7	1.1–1.4	.9–1.2	.9–1.2	.8–1.0	.8–1.0

Table 4. Expanded unemployment measures for the United States and Japan, 1984–88

[Numbers in thousands]

Category	United States					Japan				
	1984	1985	1986	1987	1988	Feb. 1984	Feb. 1985	Feb. 1986	Feb. 1987	Feb. 1988
Unemployed:										
Total, U.S. standard definition	8,539	8,312	8,237	7,425	6,701	1,570	1,560	1,590	1,710	1,620
Full-time jobseekers	7,057	6,793	6,708	5,979	5,357	[1]1,170	[1]1,130	[1]1,180	[1]1,250	[1]1,140
Part-time jobseekers	1,481	1,519	1,529	1,446	1,343	[1]400	[1]430	[1]410	[1]460	[1]480
Half	741	760	765	723	672	200	220	210	230	240
Part-time for economic reasons	5,744	5,590	5,588	5,401	5,206	2,190	2,240	2,350	2,330	2,050
Reduced hours	5,744	5,590	5,588	5,401	5,206	[2]1,940	[2]1,960	[2]2,060	[2]2,080	[2]1,870
Half	2,872	2,795	2,794	2,701	2,603	970	980	1,030	1,040	940
Zero hours	(3)	(3)	(3)	(3)	(3)	[4]250	[4]280	290	250	180
U-6 numerator[5]	10,670	10,348	10,267	9,403	8,632	2,670	2,610	2,710	2,770	2,500
Plus discouraged workers	1,283	1,204	1,121	1,026	954	—	—	—	—	—
Japan: Discouraged workers I[6]	—	—	—	—	—	1,800	2,240	2,340	2,410	2,260
Discouraged workers II[7]	—	—	—	—	—	3,250	4,020	4,190	4,380	4,080
U-7 numerator	11,952	11,552	11,388	10,429	9,586	—	—	—	—	—
Japan: I	—	—	—	—	—	4,470	4,850	5,050	5,180	4,780
Japan: II	—	—	—	—	—	5,920	6,630	6,900	7,150	6,580
Civilian labor force:										
Total, U.S. standard definition	113,544	115,461	117,834	119,865	121,669	56,300	57,150	57,620	57,830	58,720
Full-time labor force	97,632	99,178	101,085	102,631	104,017	49,880	50,330	51,030	51,030	51,200
Part-time labor force	15,912	16,283	16,750	17,234	17,651	6,420	6,820	6,590	6,800	7,520
Half	7,956	8,142	8,375	8,617	8,826	3,210	3,410	3,300	3,400	3,760
U-6 denominator[8]	105,588	107,319	109,459	111,248	112,843	53,090	53,740	54,320	54,430	54,960
U-7 denominator[9]	106,871	108,523	110,580	112,274	113,797	—	—	—	—	—
Japan: I	—	—	—	—	—	54,890	55,980	56,660	56,840	57,220
Japan: II	—	—	—	—	—	56,340	57,760	58,510	58,810	59,040
Unemployment rates (percent):										
U-5: U.S. standard definition (civilian basis)	7.5	7.2	7.0	6.2	5.5	2.8	2.7	2.8	3.0	2.8
U-6: Total full-time jobseekers plus one-half part-time jobseekers plus one-half total on part-time for economic reasons[10] as a percent of the civilian labor force less one-half of the part-time labor force	10.1	9.6	9.4	8.5	7.6	4.9	4.9	5.0	5.1	4.5
U-7: U-6 plus discouraged workers in numerator and denominator	11.2	10.6	10.3	9.3	8.4	[11]8.1–10.4	[11]8.7–11.5	[11]8.9–11.8	[11]9.1–12.2	[11]8.3–11.2

[1] Breakdown into full-time and part-time jobseekers partially estimated.

[2] Includes reported number of persons usually working part time who want more work plus reported number of persons on reduced (but not zero) hours due to slack work or other business reasons.

[3] Included in U.S. standard definition.

[4] Not reported—estimated as 18 percent of adjusted unemployed based upon February 1988 proportion.

[5] All full-time jobseekers plus one-half part-time jobseekers plus one-half on reduced hours for economic reasons plus all on zero hours for economic reasons.

[6] For Japan, all persons not in the labor force who reported that they desired a job but were not seeking work because there was no prospect of finding it, excluding the following two groups: (1) those who had sought work earlier in the month and were immediately available (reclassified by BLS as unemployed under U.S. concepts); and (2) persons who respond "no, or undecided" as to whether they could take up a job now. Discouraged workers I comes as close as possible to U.S. concepts.

[7] For Japan, this group may include some persons who would not be classified as discouraged under U.S. concepts. It includes the persons in discouraged workers I plus (1) persons who respond "no, or undecided" as to whether they could take up a job now, and (2) persons reported as unemployed in the Japanese survey, but who were not seeking work in the past month (reclassified by BLS as not in the labor force under U.S. concepts).

[8] Civilian labor force less one-half the part-time labor force.

[9] U-6 denominator plus discouraged workers.

[10] Japanese workers on "zero hours" are given full weight.

[11] Range reflects two different groups of discouraged workers (I and II).

NOTE: Data are on a civilian labor force basis.

Under the conventional definition of unemployment (U-5), the tabulation shows that the U.S. rate was 2.5 to 2.7 times the Japanese rate during 1984–86, but the differential narrowed to about 2 during 1987–88. Similarly, the differential between the expanded rates (U-6 and U-7) also narrowed, both down and across the tabulation. When the unemployment definition includes persons working part time for economic reasons (U-6), the U.S. rate declined from about twice the Japanese rate during 1984–86 to 1.7 times during 1987–88. An even broader definition of unemployment which encompasses discouraged workers (U-7) illustrates that the U.S. and Japanese rates converged to approximately the same level. At the high end of the Japanese U-7 range, the Japanese rate has surpassed the U.S. rate since 1985. However, it should be emphasized that the upper Japanese U-7 rate includes some persons who might not be classified as discouraged workers under U.S definitions.

Expanding the unemployment concept to include other elements of labor slack draws the Japanese rate closer to U.S. levels. Explanations for any remaining differential lie in such factors as the composition of the labor force, levels of frictional unemployment, and economic growth rates. □

FOOTNOTES

[1] In the *Monthly Labor Review*, see Constance Sorrentino, "Japan's low unemployment: an in-depth analysis," March 1984, pp. 18–27; and "Japanese unemployment: BLS updates its analysis," June 1987, pp. 47–53.

[2] The U-1 to U-7 framework was introduced in Julius Shiskin, "Employment and unemployment: the doughnut or the hole?" *Monthly Labor Review*, February 1976; pp. 3–10. For an international comparison based on the U-1 to U-7 framework, see Constance Sorrentino, "The Uses of the European Community Labor Force Survey for International Unemployment Comparisons," paper prepared for the Statistical Office of the European Communities, October 1987. Copies are available upon request to the author at the Bureau of Labor Statistics.

Representative **Hamilton**. Congressman Upton.

Representative **Upton**. Thank you, Mr. Chairman. Welcome back, Mrs. Norwood.

Mrs. **Norwood**. Thank you.

Representative **Upton**. I'm pleased to hear the good news this morning.

I would like to insert, without objection, my written opening statement into the record.

[The written opening statement follows:]

WRITTEN OPENING STATEMENT OF REPRESENTATIVE UPTON

IT GIVES ME GREAT PLEASURE TO JOIN IN WELCOMING DR. NORWOOD BEFORE US TODAY.

THE DATA RELEASED TODAY INDICATE THAT THE ECONOMIC EXPANSION CONTINUES TO CHUG ALONG, CREATING MORE JOBS FOR AMERICAN WORKERS. ABOUT 20 MILLION NEW JOBS HAVE BEEN ADDED TO BUSINESS PAYROLLS OVER THE COURSE OF THIS EXPANSION.

THE ONE TENTH DECLINE IN THE CIVILIAN UNEMPLOYMENT RATE ALSO IS GOOD NEWS FOR AMERICAN WORKERS. THIS YEAR THE UNEMPLOYMENT RATE HAS FLUCTUATED IN A RANGE LOWER THAN ANY IN 15 YEARS. GOOD ECONOMIC PERFORMANCE HAS BEEN REFLECTED IN A TIGHT LABOR MARKET.

HOWEVER, IT DOES SEEM CLEAR THAT THE FEDERAL RESERVE'S RECENT EFFORTS TO SLOW THE ECONOMY HAVE HAD AN IMPACT. THE PACE OF JOB GROWTH HAS SLOWED IN THE LAST FEW MONTHS, AND THERE IS SOME WEAKNESS, ESPECIALLY IN MANUFACTURING. AS I SUGGESTED SOME MONTHS AGO, MONETARY POLICY SHOULD AVOID MOVES WHICH COULD DEEPEN THE SLOWDOWN AND POSSIBLY MAKE IT SOMETHING WORSE.

Representative **Upton**. I notice, Mrs. Norwood, in your testimony you indicated that "In the Nation's factories, overall employment held steady in July after 3 months of small declines . . . ."

What signs or predictions do you think may follow, looking at the trend? Do you think that this decline has stopped, do you think that this is—what's your guess?

Mrs. **Norwood**. Well I don't predict the future, but I do think that manufacturing has clearly slowed. Durable manufacturing in particular, in terms of employment, is very weak.

Representative **Upton**. I notice a little bit further you indicate that the durable goods manufacturers have had job losses of 55,000 since March.

Mrs. **Norwood**. Yes.

Representative **Upton**. You indicate that auto manufacturing, really their job loss has been 30,000 since May.

Does auto manufacturing make up the majority of that other 25,000?

Mrs. **Norwood**. Since May it's 30,000 of the 45,000 job loss in durables. Elsewhere in durables there are a lot of very small declines, fairly steady small declines and part of that, I think, is due to the strength of the dollar. A lot of things could happen internationally that could change that, obviously.

And we should remember always that although we're not seeing employment increases, even with employment declines, overall industrial production is not going down to the same extent that employment is because productivity is still behaving fairly well.

Representative **Upton**. Do you have a separate breakout for the auto parts industry versus auto manufacturing——

Mr. **Bregger**. No, not in the data we released today.

Representative **Upton** [continuing]. Is that possible?

It's not included in the auto manufacturing though, is it?

Mrs. **Norwood**. I'm not sure about that classification, but I know that we don't break it out.

Mr. **Bregger**. We have information on it but not here.

Representative **Upton**. Would it be possible maybe that you could submit it later on in terms of what the reduction or increase has been in auto parts?

Mrs. **Norwood**. We will supply whatever we can for the record, but it is not one of the industries that we regularly publish because the samples probably aren't large enough.

[The following information was subsequently supplied for the record:]

U. S. Department of Labor

Commissioner for
Bureau of Labor Statistics
Washington, D.C. 20212

Honorable Frederick S. Upton
House of Representatives
Washington, D.C. 20515

Dear Congressman Upton:

This letter is in response to questions you raised at the August 4 Joint Economic Committee hearing concerning employment in the U.S. automobile parts industry.

This industry is officially termed "motor vehicle parts and accessories," and it is denoted by the Standard Industrial Classification (SIC) code 3714. Within the SIC framework, it represents one specific segment of the motor vehicles and equipment industry (SIC 371), and accounts for nearly half of the motor vehicle industry's jobs. The Bureau began publication of employment estimates for motor vehicle parts and accessories in 1958.

In June, the most recent month for which estimates have been published, the industry's employment level amounted to 411,100, not seasonally adjusted. This compares to a level of 408,600 in June 1988. As the enclosed chart and table illustrate, subsequent to its initial recovery after the recession of 1981-82, the industry's employment level has remained fairly stable. It did experience a modest upturn between early 1987 and 1989--during the April 1987-April 1989 period, 22,000 jobs were created. However, most of this growth occurred prior to 1989. Waning demand in the automobile market is reflected by slower employment growth this year.

Employment in motor vehicle parts and accessories, although less volatile, parallels that of motor vehicles and equipment. Although the proportion of motor vehicle employment devoted to the manufacture of parts and accessories fluctuates, the long-term trend has been one of an increasing proportion, with most of the growth occurring in the 1980s. In 1960, motor vehicle parts and accessories accounted for 43.2 percent of total employment in motor vehicles and equipment; in 1970, 44.0 percent; in 1980, 44.3 percent; and currently, 47.4 percent.

I hope this information proves useful to you. Please let me know if I may be of further assistance.

Sincerely yours,

JANET L. NORWOOD
Commissioner

Enclosures

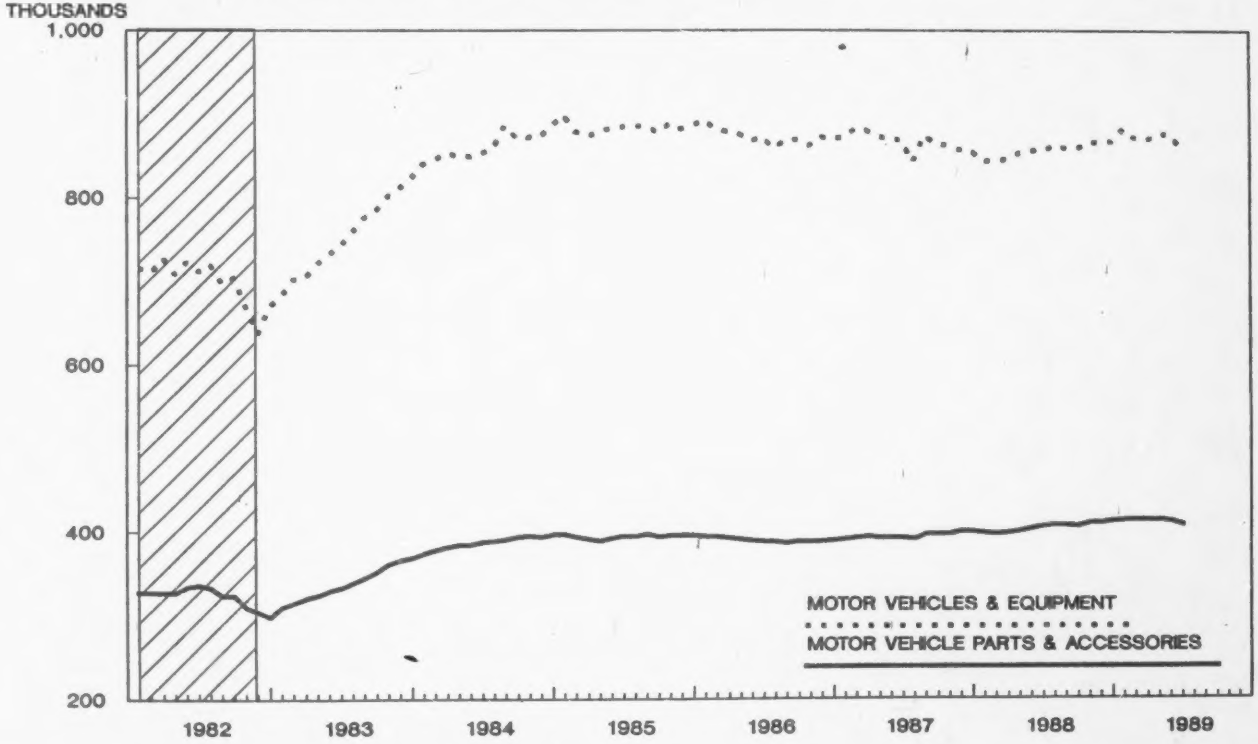
ANNUAL AVERAGE EMPLOYMENT

(in thousands)

SIC	INDUSTRY	1980	1981	1982	1983	1984	1985	1986	1987	1988
371	Motor vehicles & equipment	788.8	788.7	699.3	753.7	861.7	883.5	872.4	866.6	856.5
3714	Motor vehicle parts & accessories	349.5	363.3	323.3	339.5	368.3	394.4	390.2	395.0	405.5

SOURCE: BUREAU OF LABOR STATISTICS, August 1989

EMPLOYMENT TRENDS IN MOTOR VEHICLES & EQUIPMENT
AND MOTOR VEHICLE PARTS & ACCESSORIES
SEASONALLY ADJUSTED, 1982-1989



SOURCE: BUREAU OF LABOR STATISTICS

Representative UPTON. You indicated in talking or responding to my colleague, Olympia Snowe, that historically the women's unemployment rate has been higher, and in fact it's 0.7 percent higher in these statistics.

Now how long is it, is it——

Mrs. NORWOOD. Decades.

Representative UPTON. Decades. Has it been about the same, or is it much higher than it has been historically? Two times higher, close——

Mrs. NORWOOD. The relationship between the unemployment rate for men and women is now much more like what it had been before 1980. Throughout much of the current recovery, it had appeared that there was a shift taking place. Now it seems to be returning to that age-old pattern.

Mr. BREGGER. One of the reasons for the longer term pattern was that women used to be in and out of the labor force——

Mrs. NORWOOD. Much more.

Mr. BREGGER [continuing]. For example, when they reached their mid- to late-twenties, they would get married, have children, drop out for a number of years and then they would reenter after their children were grown. Obviously, any group that's in and out of the labor force has a higher unemployment rate. Now, that pattern no longer holds among most women; they are more likely to stay in the labor force. As a consequence, there's less what you might call frictional unemployment and their unemployment rates tend to be lower.

During the early eighties, women's rates were actually considerably lower than that for men, and it looked like for a while there that their rates were going to be identical, but now we're seeing a different pattern over the last few months.

Representative UPTON. So these numbers are even more alarming than what we might have thought just on the surface.

Mrs. NORWOOD. I think it's a bit early to decide anything on the basis of the data thus far, but it does bear watching.

Representative UPTON. Let me just ask one other question: I note that the pace of employment growth has slowed in recent months. What do you think are the most likely reasons for that?

Mrs. NORWOOD. I think the whole economy has slowed. It's very clear that there has been an attempt to slow the economy and the employment data are following along, as people had expected.

I think it's important to recognize that there is still considerable employment growth. We are not headed downward in employment, we still have a couple hundred thousand new jobs being added every month and that's significant growth. But it is not what we had been having and expecting over the last 5 years, 6 years.

Representative UPTON. Would you say that the Fed has played the largest role in slowing the economy?

Mrs. NORWOOD. Well, it's not just the Fed. Certainly there have been attempts to tighten because of inflationary pressures, but we have international developments going on as well. For quite a while we were not competitive internationally, then we increased our exports considerably. We are now seeing our export performance slow a bit, but we're still exporting some things. Really, you can't pinpoint a particular development, I think.

Representative UPTON. Thank you.

Representative HAMILTON. Senator Sarbanes.

Senator SARBANES. Thank you, Mr. Chairman.

Commissioner, first I want to thank you for the followup to the health benefit coverages of full- and part-time workers. I note in your letter you say much more detailed data will soon be available. When would that be?

Mrs. NORWOOD. We should get it in September, perhaps October.

Senator SARBANES. Would you give us a followup?

Mrs. NORWOOD. Yes, as soon as we——

Senator SARBANES. It's helpful to have this but it's just this one table here.

Mrs. NORWOOD. Yes.

Senator SARBANES. I am absolutely staggered as I look at some of these charts by the volatility of your numbers, and if I could go to table 3 of this handout you gave us. It's Labor Force Participation and Unemployment Rates of Recent High School Graduates and Dropouts, 16- to 24-years old by Sex and Race.

Mrs. NORWOOD. Table 3, yes.

Senator SARBANES. Take recent high school graduates not enrolled in college, labor force participation rates.

Mrs. NORWOOD. Yes.

Senator SARBANES. These total figures run 81 through 84 percent and then you have the recent high school dropouts labor force participation rates. You get a drop from 1987 to 1988 from 66.4 to 59.2 percent. That, of course, gives you an impact on the unemployment rate which then has a drop from 37.8 percent to——

Mrs. NORWOOD. Yes, that's right.

Senator SARBANES. If you come down to women, you get a drop from 57.6 percent to a 40.1 percent participation rate.

If you come down to blacks, you get a drop—this is for recent high school dropouts: in 1987 the participation rate in the labor force was 60.1 percent. Now, your figures tell me that in 1988 the participation rate was 39.4 percent. In the years prior to 1987, the participation rates range between 50 and 58 percent.

I look at those figures and I say to myself there has to be something wrong with this 39 percent figure, it just doesn't seem to logically correspond to anything else that's in this table.

Mrs. NORWOOD. That could be. I agree with you that that number does—certainly looks like an outlier. As you know, the number of dropouts is a small group and it does bounce around, but that figure does look awfully low.

Senator SARBANES. If we take women, their participation rate, according to your figures, dropped from 57.6 percent in 1987——

Mrs. NORWOOD. Yes, to 40 percent.

Senator SARBANES [continuing]. To 40 percent in 1988.

Mrs. NORWOOD. I can't explain it.

Senator SARBANES. Well, of course, this drop in the participation rate would explain the drop in the unemployment rate to a large degree; wouldn't it?

Mrs. NORWOOD. Well it would help to explain it. This is——

Senator SARBANES. Let's take women, that's a bigger sample, obviously. You're running unemployment rates among recent women high school dropouts in 1975, 33 percent; 1980, 33 percent; 1985, 32 percent; 1986, 36 percent; 1987, 37 percent; 1988, 22 percent. Well that's terrific. What a performance in 1988. We cut the unemployment rate for women recent high school dropouts from 37 percent to 22 percent. I mean, we really are doing something right here in the economy; I mean, that's the initial reaction.

Then you look over at this participation rate and you see that you get a drop there from 57 percent to 40 percent, which obviously is going to have a marked impact on the unemployment rate; isn't that correct?

Mrs. **Norwood**. Well, you're quite right that those figures do look strange. They may be dominated by the black component, which is quite volatile. I cannot give you any words of wisdom about that.

Senator **Sarbanes**. Well, if you could look back on those I'd like to know what's behind that, because you know you end up——

Mrs. **Norwood**. We'll examine that. I would like to see what we could learn from annual figures. They would be for all youth not just the most recent graduating class, but I expect that they would be less volatile.

[The following information was subsequently supplied for the record:]

Labor force participation and unemployment rates of high school graduates and dropouts 16 to 24 years old by sex and race, annual averages, 1985-88

Year	High school graduates				High school dropouts	
	Enrolled in college		Not enrolled in college [1]			
	Labor force participation rate	Unemployment rate	Labor force participation rate	Unemployment rate	Labor force participation rate	Unemployment rate
Total						
1985	53.6	8.5	84.2	12.6	64.4	24.5
1986	55.0	8.7	84.6	12.4	64.1	23.6
1987	55.8	8.1	84.8	10.7	64.0	21.8
1988	56.5	6.9	84.4	10.1	64.5	20.0
Men						
1985	52.0	8.9	93.1	12.5	79.0	23.3
1986	53.7	9.2	93.2	12.2	78.0	22.2
1987	54.3	8.4	93.1	10.5	76.8	21.0
1988	55.0	7.2	93.3	9.9	77.9	18.8
Women						
1985	55.2	8.2	76.3	12.7	48.2	26.5
1986	56.3	8.2	76.7	12.6	48.7	26.0
1987	57.3	7.9	77.3	10.8	49.9	23.2
1988	58.0	6.7	76.3	10.4	49.6	22.1
White						
1985	55.6	7.1	85.6	10.3	67.0	21.5
1986	57.2	7.4	85.9	10.1	66.7	20.3
1987	57.7	7.0	86.4	8.8	66.9	18.5
1988	58.6	6.0	86.3	8.3	67.4	17.3
Black						
1985	42.3	22.5	77.1	27.2	53.4	42.2
1986	43.6	20.7	77.9	26.6	53.4	43.5
1987	46.2	19.3	76.8	22.0	51.8	41.3
1988	45.8	17.4	75.8	21.7	52.2	37.4

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[1] High school graduates who have not completed any years of college.

SOURCE: U.S. Department of Labor
Bureau of Labor Statistics

Senator **Sarbanes**. Let me ask this question: Is it reasonable to assume that the participation rate of teenagers would be higher in the summer?

Mrs. **Norwood**. Yes. Certainly.

Senator **Sarbanes**. All right. Now if you would turn to Table A-3 of the Employment Situation press release.

I'm looking at both sexes, 16 to 19 years of age.

Mrs. **Norwood**. White and black.

Senator **Sarbanes**. This is white only I think here.

Mrs. **Norwood**. All right.

Senator **Sarbanes**. The participation rate in July dropped——

Mrs. **Norwood**. That's the seasonally adjusted figure. Before seasonal adjustment participation was up, 68 to 72 percent.

Senator **Sarbanes**. Is the participation rate for teenagers seasonally adjusted higher in the nonsummer months?

Mrs. **Norwood**. There should be no seasonal pattern to seasonally adjusted data.

Mr. **Bregger**. On an actual basis, as you indicated, participation is higher in the summer for youth because that's the time they're out of school and typically in the labor force with jobs.

Mrs. **Norwood**. If the seasonals were well done you would expect that we wouldn't see that shift in the seasonally adjusted data.

Senator **Sarbanes**. I'm having difficulty understanding why the participation rate of teenagers would be higher in March or in April and May than it would be in July.

Mrs. **Norwood**. There are very small differences there in the seasonally adjusted figures. You go from 58.7 to 59 percent and then up two-tenths and then down. That's probably within the range of error.

Senator **Sarbanes**. Is the participation rate for all teenagers 16 to 19 on table A-2 also within the margin of error, a drop from June to July?

Mrs. **Norwood**. That's a statistically significant change, but the July level is just about where it had been in May.

Mr. **Bregger**. I would suggest that the June figure was a little high and the reason for that was that with the survey week being as late as it was, many of the youth were in the labor market by June because they were most likely to be out of school. The June estimate may have been a slight overstatement and then there's what I would call a small correction in July.

Senator **Sarbanes**. Is the drop in the participation rate from June to July among the black teenagers, which is table A-3 at the bottom, from 45.7 to 44 percent statistically significant?

Mrs. **Norwood**. It went up a great deal more the month before.

Senator **Sarbanes**. I understand that. I'm trying to make a different point here. I'm about to make a different point.

Mrs. **Norwood**. For blacks, I don't think so.

Senator **Sarbanes**. So this drop in the unemployment rate that you made reference to, how much of that is attributable to a drop in the participation rate?

Mrs. **Norwood**. I can't tell you that. As I indicated, I believe that though it's there that it could well jump right back up.

Mr. **Bregger**. Also you'll note that their employment is up over the 2 months and that would explain a drop in the unemployment rate more, I think, if this is a real change; we're not certain with a decline of this magnitude.

Senator **Sarbanes**. I guess my question is when you have these enormous alterations that don't seem to fit into the pattern I have to question the——

Mrs. **Norwood**. Survey.

Senator **Sarbanes** [continuing]. The survey, yes.

Mrs. **Norwood**. I think what you are questioning——

Senator **Sarbanes**. If you tell me that the unemployment rate among women who are recent high school dropouts has dropped from 37.3 percent to 1987 to 22 percent in 1988, when it was in the years prior to 1987, 36, 32, 33, and 33 percent, I mean I have to stop for a moment and say well now that's an incredible drop and that's really wonderful if it's real, but is it real.

And then looking at your very table, when I go one table over I discover that the labor force participation has dropped, according to your figures, from 57 percent to 40 percent. When the labor force participation, going back again from 57 percent was 54, 52, 52 percent, and so forth.

So it seems to me something is wrong with these figures. You get the same thing in the total—all high school dropouts. You have that unemployment rate dropping from 38 percent to 26 percent but then the participation rate has dropped from 66 percent to 59 percent.

Mrs. **Norwood**. I think what this suggests is that it is extremely difficult to do analysis with data for one point in time. This is data that we had from a supplement for the month of October, to the current population survey, so we only have 1 month. And as you can see from the data that you reviewed with us a few moments ago, there are shifts from 1 month to the next. There are difficulties, particularly for the groups of the population that are most at risk, with the sizes of samples that we have in some of our surveys and with the fact that we don't cover some of these issues except once in a year or two. I think that's a serious problem.

Senator **Sarbanes**. Thank you very much.

Representative **Hamilton**. Just a few more questions, Madam Commissioner.

With respect to health insurance coverage of part-time workers, is it correct that the data indicate that the part-time workers are less well covered by health insurance than full-time workers?

Mrs. **Norwood**. Yes, people who usually work part time, only about 16 percent of them are covered by employer or union-provided health care.

Representative **Hamilton**. Only 16 percent.

Mrs. **Norwood**. Yes.

Representative **Hamilton**. And when you have your final report, will——

Mrs. **Norwood**. Excuse me, may I say, however, that many of those people are young and they may be covered by their parents' plans.

Representative **Hamilton**. You wouldn't know how many——

Mrs. **Norwood**. About 40 percent of them.

Representative **Hamilton**. Forty percent might be covered elsewhere; is that it?

Mrs. NORWOOD. Yes, are covered by a family member.

Representative HAMILTON. They are covered.

Mrs. NORWOOD. Yes. Actually, less than 20 percent of part-time workers have no coverage at all.

Representative HAMILTON. Now, when you have your data all put together are you going to be able to tell, for example, whether the blacks are less likely to be covered than whites with respect to medical insurance?

Mrs. NORWOOD. Yes, we know that——

Representative HAMILTON. We already know that?

Mrs. NORWOOD. Yes, if we look—I can't separate it for part-time workers and full-time workers, but I know that for 1987, for example, that 22 percent of black workers were without health care coverage and 34 percent of the Hispanics.

Representative HAMILTON. And the white figure?

Mrs. NORWOOD. The white figure is 13 percent.

Representative HAMILTON. So there's really quite a difference on health care coverage by race, by racial group.

Mrs. NORWOOD. Yes.

Representative HAMILTON. And that's because the Hispanics and the blacks are doing what?

Mrs. NORWOOD. I think it's several things, it's the kind of—they work in smaller establishments, many of which——

Representative HAMILTON. Small businesses, more migrant workers.

Mrs. NORWOOD. Yes, more migrant workers and they're in and out of the labor force.

Representative HAMILTON. Yes.

On the high school dropouts—not dropouts but graduates, the number of high school graduates declined by more than 500,000 between 1975 and 1988.

Is that due entirely to the declining population of that group or are there other factors involved?

Mrs. NORWOOD. Do you know that, Mr. Bregger.

Mr. BREGGER. Well, there has been a very significant population decline among the 16- to 19-year-olds.

Representative HAMILTON. There has been a sharp decline in the number of high school students; right?

Mrs. NORWOOD. Yes.

Representative HAMILTON. So this drop in the number of graduates reflects largely at least just demographics; right?

Mrs. NORWOOD. Yes, we think so.

Representative HAMILTON. And is that also the principle reason for the decline in the number of dropouts since 1975, just the fact that you have fewer high school students?

Mrs. NORWOOD. I would doubt that that is the only factor.

Mr. BREGGER. I think it's a function both of the population changes since 1975. Because 1975 was near the peak of the baby boom, so it was a much larger population group then, as we indicated. But also it's clear that students are staying in school.

Representative HAMILTON. They are?

Mrs. NORWOOD. Yes.

Representative HAMILTON. I see. So there's some encouragement there; right.

On mass layoffs, you've released a report on that. Was there an increase or a decrease in mass layoffs in 1988?

Mrs. NORWOOD. In 1987 we didn't have as many States in the program, so it's a little bit difficult to compare. You'd have to pull out the States that we were able to cover in both years.

Representative HAMILTON. Do you have——

Mr. BREGGER. We have 29 States in common between 1987 and 1988, and there were fewer layoffs among those—in those States.

Representative HAMILTON. In when?

Mr. BREGGER. In 1988 compared with 1987.

Representative HAMILTON. OK.

What's happening in 1989, do you know?

Mr. BREGGER. We have no information yet.

Representative HAMILTON. You don't have any information about that?

Mrs. NORWOOD. Not yet.

Representative HAMILTON. Do you have any information as to whether certain labor market groups were disproportionately affected by mass layoffs?

Mrs. NORWOOD. Well, we know from 1988 that some States were very much more affected than others, but we don't have any information really on 1989.

Representative HAMILTON. Now a quarter of the workers did not receive any unemployment insurance benefits. Why not?

Mrs. NORWOOD. They may not have worked long enough, a whole variety of reasons.

Mr. BREGGER. Many of them don't apply. They may get jobs immediately elsewhere or they may not apply.

There has been a study recently that makes it clear that that's one of the reasons that there's this decline in proportion of total unemployed who are claimants.

Mrs. NORWOOD. There are a number of theories about that and there are a large number of studies. You know, less than a third of unemployed persons are covered by unemployment insurance.

And I would think that with mass layoffs, because they are large, there is much more of a chance of having a specific program to try to place those people more quickly.

Representative HAMILTON. What's the purpose of this mass layoff program, the statistics on that? What kind of information does that tell us about the economy?

Mrs. NORWOOD. Well, the program really is the result of a longstanding request of the Congress to the Department of Labor to measure the number of people who are affected by plant closings and large layoffs.

Representative HAMILTON. I see.

Mrs. NORWOOD. We designed this after some years of conversations between the Congress and the Department. The job was given to the Bureau of Labor Statistics quite recently and we designed it in the Federal/State cooperative system because we felt that the data would be useful to each of the States in their job service activities and that by having them develop the data they would be able to use it effectively because it would identify the problem areas for them.

The program is being implemented over a period of time, and in 1988 we had 42 States. We still are short of full coverage.

Representative HAMILTON. And some of the big States are not yet covered.

Mrs. NORWOOD. That's right, California, for example, is not yet covered.

Representative HAMILTON. California, Illinois, Michigan, and Ohio.

Mrs. NORWOOD. That's right, for 1988.

Representative HAMILTON. Will they be coming in?

Mrs. NORWOOD. There's a cost involved.

Representative HAMILTON. There's a what?

Mrs. NORWOOD. There's a cost involved.

Representative HAMILTON. I see. To the State or to——

Mrs. NORWOOD. To us.

Representative HAMILTON. OK.

Mr. BREGGER. At present all of the States are in the program with the exception of California.

Representative HAMILTON. I see.

Now, what percentage of families have two or more earners today?

Mrs. NORWOOD. More than half.

Representative HAMILTON. And is that rising?

Mrs. NORWOOD. It has edged up over the past two decades.

Representative HAMILTON. So we have an economy here where more and more families need two or more earners in order to maintain their standard; right?

Mrs. NORWOOD. In order to maintain the standard at which they are living, yes.

Representative HAMILTON. Was there any significant change among the families with children and the trend toward more working mothers?

Mrs. NORWOOD. We are seeing a large proportion of mothers of children aged 1 year or younger who are in the work force; about half of them are in the work force now and that's a lot more than, say, 10 years ago.

Representative HAMILTON. And are you seeing any change in the number of families that are maintained by single women?

Mrs. NORWOOD. That's a large number—over 11 million.

Representative HAMILTON. Going up?

Mrs. NORWOOD. Yes.

Representative HAMILTON. That's also going up.

Mrs. NORWOOD. Yes, it has increased substantially over the past decade.

Representative HAMILTON. So what's happening is that the traditional family where the father works and the mother stays at home and takes care of the children is becoming a smaller and smaller percentage; isn't it?

Mrs. NORWOOD. It's a very small proportion.

Representative HAMILTON. A very small proportion.

Mrs. NORWOOD. Yes, its a very small—particularly if you look at the traditional family that's often used to——

Representative HAMILTON. Can you give me a rough figure when you say a very small proportion?

Mrs. **Norwood**. Well if you consider the traditional family to be a working father with a wife and two children at home, that type of family comprises fewer than 4 percent of all American families.

Representative **Hamilton**. With two children.

Mrs. **Norwood**. Yes, with two children. I don't know what the exact figure is for all families.

Representative **Hamilton**. You might supply that for us. I'd be interested in that, if you would.

Do you see anything in the productivity figures which would suggest that the economy will nearly double its productivity growth in the next 5 years?

Mrs. **Norwood**. Productivity in manufacturing is a little slower than it has been year over year, but it is still 3 percent. The nonfarm business economy is pretty low, I don't know what the figure will bring.

Representative **Hamilton**. Well is there anything in the figures that would suggest to you we're going to have a spurt in productivity growth?

Mrs. **Norwood**. No, except that obviously what happens to the business cycle does affect productivity because what happens really is that when you layoff people, you layoff people before you cut production, so there is an effect there.

Representative **Hamilton**. Let me ask just a couple of more questions: How important to the economy is employment in the defense-related industries?

Mrs. **Norwood**. It's quite important. We have tried in several ways to separate that, but it is extraordinarily difficult——

Representative **Hamilton**. Can you say, for example, what percentage of total manufacturing employment is in the defense industries?

Mrs. **Norwood**. No, I can't give you an accurate figure on that. We tried to do that but the difficulty is that there's so much subcontracting that it is very difficult to get it. You can look, as we did, at Defense Department information about the particular companies but there was so much subcontracting that the figure was not realistic.

Representative **Hamilton**. If you were taking a guess at the portion of employment in the economy in the defense-related industry, what would be in the range?

Mrs. **Norwood**. I don't know, I think I would—I can supply a guess to you based on some figures that we have but I don't have them with me. But I will write you a letter with that.

Representative **Hamilton**. I would be interested in that.

Mrs. **Norwood**. All right.

[The following information was subsequently supplied for the record:]

U. S. Department of Labor

Commissioner for
Bureau of Labor Statistics
Washington, D.C. 20212

Honorable Lee H. Hamilton
House of Representatives
Washington, D.C. 20515

Dear Congressman Hamilton:

This letter is in response to a question you raised at the August 4 Joint Economic Committee hearing concerning defense-related employment.

The concept of defense-related employment, although rather straightforward in theory, proves more difficult to measure in practice. Henry and Oliver, in a study summarized by a Monthly Labor Review article (enclosed), estimated the employment effects of defense spending during the 1977-85 period. They noted that defense outlays accelerated after 1980 while nondefense-based production in many industries was declining. Using input-output analysis to capture both the direct and indirect effects, the authors concluded that 3.2 million private sector jobs in 1985 were attributable to defense spending. A majority of these jobs are in manufacturing, primarily in durable goods industries. Henry and Oliver found that, in 1985, defense was responsible for 3 percent of all private sector jobs, 9 percent of all manufacturing jobs, and 14 percent of all durable goods jobs. This study has not been updated.

Although the number of jobs currently being supported by defense outlays is not available, I have enclosed two charts depicting the collective employment trend of the five manufacturing industries that have the largest shares of their employment tied to defense. This group consists of ship building and repairing, guided missiles and space vehicles, ordnance and accessories, aircraft and parts, and communication equipment. Together, they currently account for 1.6 million jobs, or 8 percent of the manufacturing employment level. I would like to stress that not all of these jobs are defense-related; the Henry-Oliver analysis found that 50 percent or more of these industries' jobs were supported by defense outlays.

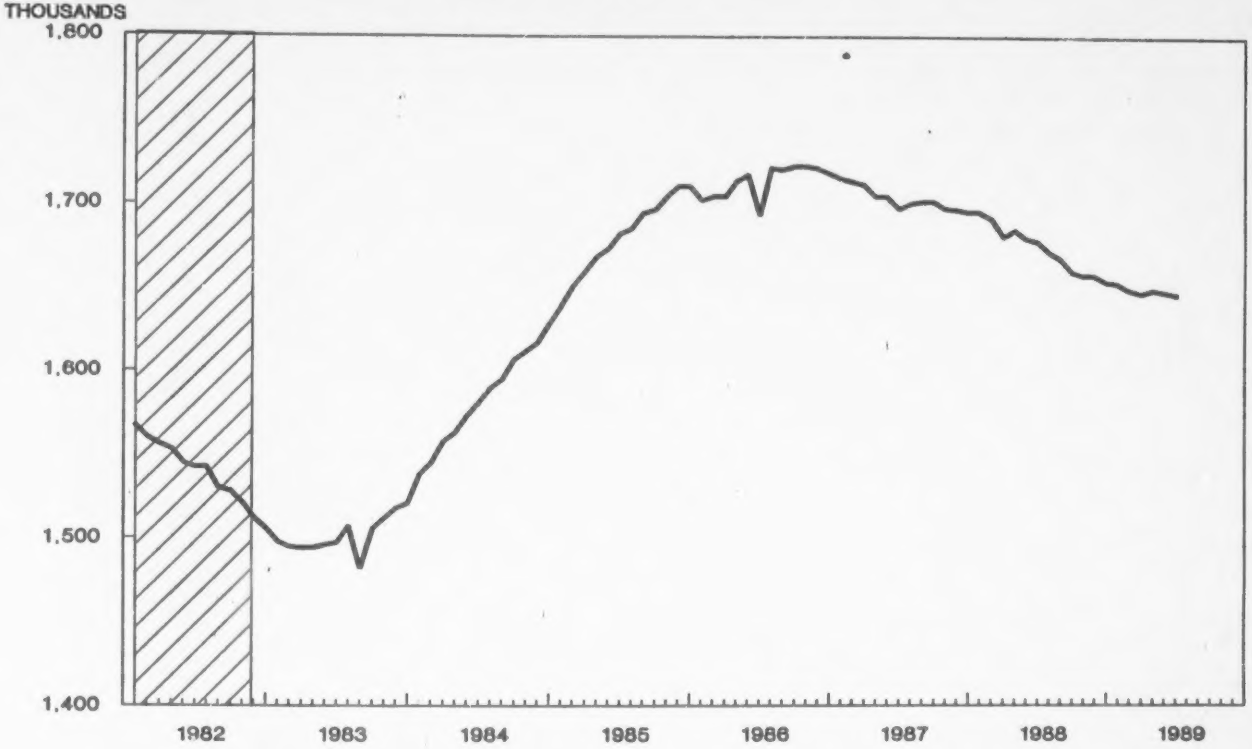
I hope this information proves useful to you. Please let me know if I may be of further assistance.

Sincerely yours,

JANET L. NORWOOD
Commissioner

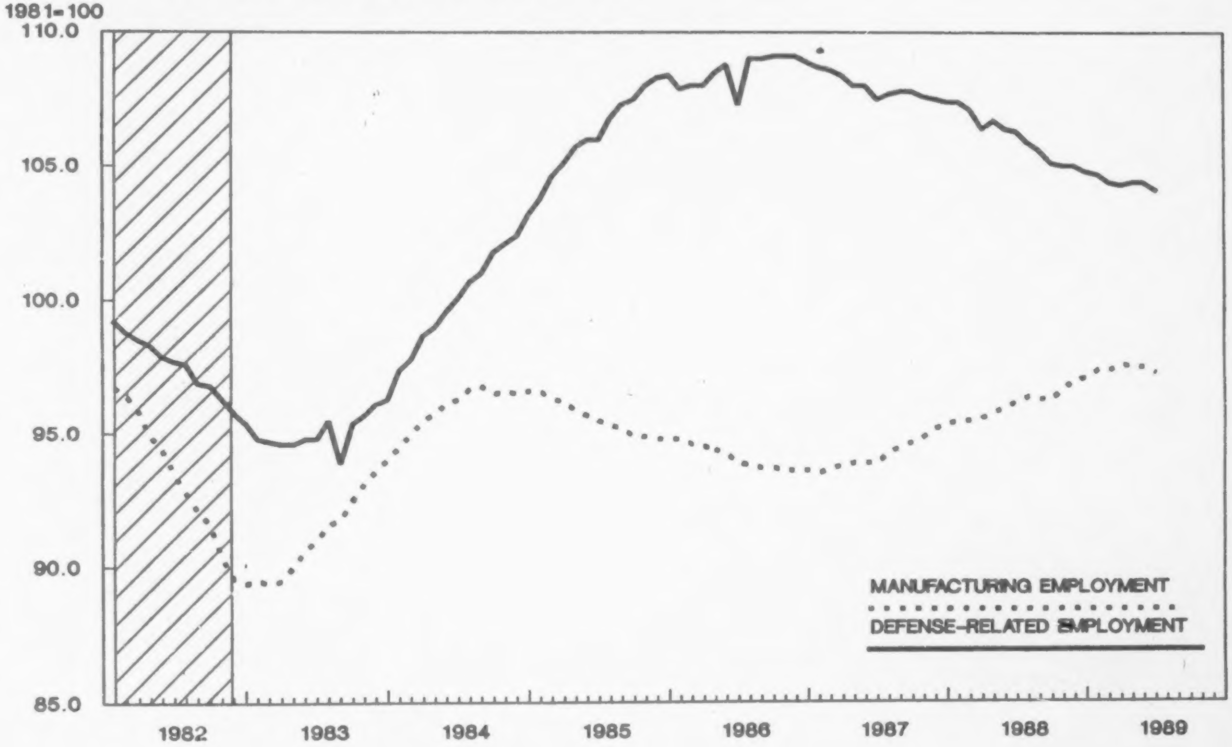
Enclosures

EMPLOYMENT IN DEFENSE-RELATED INDUSTRIES
SEASONALLY ADJUSTED, 1982-1989



SOURCE: BUREAU OF LABOR STATISTICS

EMPLOYMENT TRENDS IN ALL-MANUFACTURING
AND IN DEFENSE-RELATED INDUSTRIES
SEASONALLY ADJUSTED, 1982-1989



SOURCE: BUREAU OF LABOR STATISTICS

The defense buildup, 1977–85: effects on production and employment

After several years of post-Vietnam decline, defense spending for major programs started the current peacetime buildup; the acceleration between 1980 and 1985 cushioned the decline in production jobs

David K. Henry and Richard P. Oliver

Much of the defense buildup during the 1980–85 period required production from durable manufacturing industries in which nondefense production was either declining or growing slowly.[1] Increasing defense outlays, therefore, cushioned a reduction in production jobs, even though defense accounted for only a small portion of total output and employment of these industries.

This article provides estimates of output and employment levels during the current defense buildup, which began in 1977. With special emphasis on the high growth 1980–85 period, the study shows the impact of increased U.S. military spending on industries with defense-related production.

Historical trends

The current peacetime buildup began in 1977. In 1976, $157.5 billion (1982 constant dollars) were expended by the military, which represented 5.6 percent of the economy when measured as gross national product (GNP). The following tabulation shows national defense spending and GNP (in billions of constant 1982 dollars) beginning in 1977 and ending in 1985, the latest year for which data are available.

Year	*Gross national product*	*National defense*	*Percent of GNP*
1977	2,958.5	159.2	5.4
1978	3,115.1	160.7	5.2
1979	3,192.3	164.3	5.1
1980	3,187.0	171.2	5.3
1981	3,248.7	180.3	5.5
1982	3,165.9	193.8	6.1
1983	3,279.0	206.9	6.3
1984	3,489.8	219.4	6.3
1985	3,582.1	235.7	6.6

Table 1 provides a comparison of the defense buildup that occurred during the Vietnam War and during the 1977–85 period. In addition to GNP and national defense spending, table 1 shows capacity utilization, unemployment, and the GNP deflator.

Between 1977 and 1980, real defense spending increased by about 2 percent annually. However, between 1980 and 1985, defense expenditures accelerated, increasing by 5.5 percent annually. By 1985, national defense represented $235.7 billion or 6.6 percent of GNP—the largest proportion of the economy during the peacetime buildup.

In comparison, during the 1964–68 phase of the Vietnam War, real defense spending increased by 5.4 percent annually and reached $236.6 billion (in 1982 dollars) in 1968—the peak year for spending. In constant dollars, the national defense level reached in the peak of the Vietnam buildup was about the same level as real defense spending in 1985. (See table 1.) Although real levels of spending have been approximately the same as those during the Vietnam War, national defense then represented 10 percent of GNP, about 4 percentage points greater than the level during the recent buildup. Between 1968 and 1976, real defense spending declined from 10.0 percent in 1968 to just over 5 percent when the current buildup began.

The buildup during the 1960's occurred during generally high capacity utilization rates for manufacturing industries, along with low unemployment. During the 1980's buildup,

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capacity utilization was relatively low, with higher unemployment rates. Also, there was a gradual increase in the annual percentage change in the GNP deflator during the 1960's, compared with an accelerated increase of the annual percentage change of a relatively higher GNP deflator during the 1980's defense buildup.

Defense programs

Major programs included in the Department of Defense budget are military personnel, operations and maintenance, procurement, research and development, and all other budget categories including military construction, family housing, and nondepartmental defense. Outlays for these programs in 1977, 1980, and 1985 and the percent change from 1977 to 1980 and from 1980 to 1985 are shown in table 2. The percent distribution of expenditures among the programs for 1977 and 1985, highlighting the shift in program emphasis, is illustrated in chart 1.

The distribution of expenditures among the defense programs determines the impact of defense spending on output and employment by industry and occupation in the overall economy. In addition to the defense program redistribution, or change in spending patterns between 1977 and 1985, it should be noted that the pay portion of the 1968 budget was 52 percent compared with 41 percent in 1985. This suggests greater allocation of expenditures to industry sectors that support the military—the defense industrial base. During the Vietnam period, allocation of the nonpay portion of the defense budget was greater for war items consumed (for example, ammunition), compared with the increased share for major weapons systems acquisition during the current buildup.

Effects on output

Our analysis begins in 1977, when defense expenditures started to increase again after several years of post-Vietnam decline. Acceleration in defense spending between 1980 and 1985 provides another logical period for analysis. The analysis focuses on industries that produced more than 10 percent of their output directly or indirectly for defense in 1985. (See table 3.)

Table 1. Comparison of selected economic indicators during the Vietnam War, 1964–68, and the current peacetime defense buildup, 1980–85
[In billions of 1982 dollars]

Period	GNP	National defense	Capacity utilization (percent)	Unemployment rate (percent)	GNP deflator 1982=100
Vietnam War:					
1964	1,973.2	189.4	88	5.2	38.8
1965	2,087.5	181.6	90	4.5	40.1
1966	2,208.3	207.6	91	3.8	41.1
1967	2,271.4	231.7	87	3.8	42.1
1968	2,365.6	236.6	87	3.6	43.7
Current peacetime:					
1980	3,187.1	171.2	79	7.1	86.1
1981	3,248.8	180.3	78	7.6	94.1
1982	3,166.0	193.8	70	9.7	100.0
1983	3,279.1	208.9	74	9.6	104.1
1984	3,489.9	219.4	81	7.5	108.3
1985	3,585.2	235.7	80	7.2	112.3

NOTE: Changes based on unrounded data.
SOURCE: GNP, national defense, and GNP deflator from the Bureau of Economic Analysis, U.S. Department of Commerce; capacity utilization (all manufacturing) from the Federal Reserve Board; and unemployment (total labor force) from the Bureau of Labor Statistics.

Table 2. Defense budget outlays by program, 1977, 1980, and 1985
[Billions of 1982 dollars]

Defense program	1977	1980	1985[1]	Percent change 1977–80	Percent change 1980–85
Total defense[2]	159.2	171.2	235.7	7.5	37.7
Military personnel	44.8	45.7	58.2	2.0	27.4
Operations and maintenance	56.4	59.2	76.6	5.0	29.4
Procurement:					
Aircraft	11.8	15.8	25.2	33.9	59.5
Missiles	5.7	6.5	10.4	14.0	60.0
Weapons and tracked vehicles	1.0	1.9	3.5	90.0	84.2
Ammunition	1.2	1.7	1.6	41.7	−0.6
Ships	5.3	6.0	8.0	13.2	33.3
Other	8.6	9.4	15.1	9.3	60.6
Research and testing	17.2	18.7	28.7	8.7	53.4
Military construction	3.3	3.4	4.7	3.0	38.2
Family housing	2.4	2.2	2.6	−8.4	18.1
Nondepartmental defense	0.8	0.9	0.7	12.5	−13.3

[1] Preliminary outlay estimates.

[2] Programs may not sum to total defense due to rounding.

SOURCE: U.S. Department of Commerce, Office of Business Analysis.

Of the 537 industries evaluated, 21 produced 10 percent or greater of their output for defense in 1977.[2] This output was either for direct military purchases, such as aircraft and other weapons systems, or indirect purchases for defense applications, such as forgings and castings used in tanks. In 1980, the number of industries that met the 10-percent criterion rose to 27. By 1985, this number had reached 45.

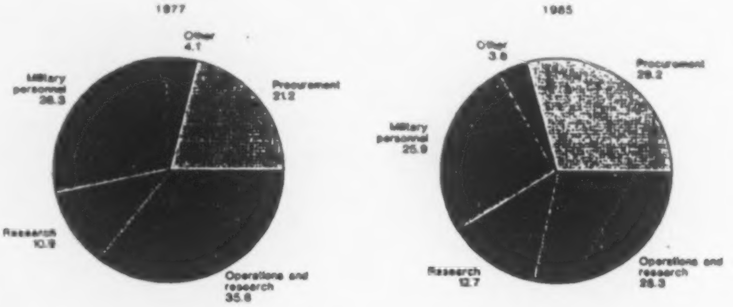
Real increases in expenditures for defense programs—in many cases, combined with declines in total output—made many of these industries more dependent on defense. Of the 45 industries with a defense share of total output greater than 10 percent, 29 experienced real declines in total output between 1980 and 1985. (See table 3.)

Some industries make products that are primarily or predominately for military use. In 1985, five industries had defense-related output of 75 percent or more: shipbuilding, including ship repair; ammunition, except small arms ammunition; ordnance, not elsewhere classified; missiles; and aircraft and missile engines. Four additional industries—tanks, aircraft, explosives, and radio and television communications equipment—produced between 50 and 74 percent of their output for defense, and nine other industries—small arms, aircraft and missile parts, small arms ammunition, cutting machine tools, engineering instruments, truck trailers, electron tubes, nonferrous mining (except copper), and nonferrous forgings—produced between 25 and 49 percent of their output for defense.

Shipbuilding. The shipbuilding industry was more de-

Chart 1. Distribution of total outlays in the defense budget, 1977 and 1985

(in percent of real dollars)



SOURCE: Office of Business Analysis, Department of Commerce

pendent on defense expenditures than any other industry in 1985. Nearly all (93 percent) of new ship construction and repair and renovation work was produced for the military. This is a dramatic increase from the 61-percent defense share of total output in 1980 and the 45-percent share in 1977. Naval construction and repair increased 42 percent between 1980 and 1985, while overall shipbuilding declined 15 percent.

The increased dependence of the shipbuilding industry on military orders has been sustained in the 1980 through 1985 period because of the Administration's commitment to a 600-ship fleet by the end of the decade. In 1980, the number of deployable naval battle forces was 479. By 1985, that number reached 542. The increase was mainly attributed to the addition to the fleet of frigates, nuclear attack submarines, and surface support ships (transport ships similar in construction to commercial ships). At the rate of 20 to 25 new deployable ships per year (new construction and conversions) throughout the remainder of this decade, the 600-ship goal should be attained.

On January 1, 1985, commercial ship construction showed 340,000 tons of gross tonnage on order, compared with 1,900,000 tons in 1980. In 1975, gross tonnage on order was 5,061,000 tons. These declines in overall ship construction were countered and have been more or less replaced by military ship construction. The "T" ship or transport ship program provided for much of the industry's offset of continued declining orders for commercial ships. The T-ship program is part of the Navy's Military Sealift Command and includes such ships as oilers, ocean surveillance ships, and maritime repositioning ships. Of the 77 ships on order or under construction for the Navy on October 1, 1984, 22 were T-ships. In October 1985, 13 commercial shipyards had been awarded contracts for construction of 29 new T-ships and for major renovation of 23 merchant ships.

Repair of ships declined substantially between 1980 and 1984, except for repair of Navy ships. In 1984, 30 percent of Navy repair work was done in private shipyards, as opposed to naval shipyards, compared with 15 percent in 1980.

Ammunition and ordnance. From 1980 to 1985, output for defense in the ammunition industry (except small arms) increased 98 percent and for ordnance (not elsewhere classified), 83 percent. These increases compare with the 16- and −7-percent changes registered between 1977 and 1980. Domestic military purchases accounted for 88 percent of the total for ammunition and 86 percent for ordnance for the 1980-85 period. A small portion was purchased by State and local governments. The remaining (12 and 14 percent) output was mainly for export. Here and elsewhere in this article, defense purchases do not include U.S. foreign military sales or licensed commercial exports of military items.

The increase in defense purchases from the ammunition and ordnance industries seems inconsistent with the near-zero increase in budget outlays for the ammunition procurement program. This difference is attributed to the diverse mix of products made by these industries. The large ammunition industry produced such products as arming and fusing devices for missiles, missile warheads, and torpedoes and parts that are purchased for the missiles procurement and research and testing programs, in addition to ammunition over 30 millimeters in diameter.

Aerospace. Aerospace industries showed a dramatic increase in reliance on military orders between 1980 and 1985, while total output increased only slightly, 2 percent. The slowdown in commercial orders was attributed mostly to lower production of large and medium-size transport aircraft resulting from deferments of new equipment purchases by financially troubled airlines during this period. From 1977 to 1980, defense aircraft production increased about 6 percent, compared with the 80-percent increase between 1980 and 1985. Production of aircraft and missile engines for defense increased by 14 percent between 1977 and 1980, compared with the 69-percent increase from 1980 to 1985.

Because of the decline in the rate of civilian purchases—combined with an increase in defense purchases—the defense share of aircraft output equaled 66 percent in 1985, compared with 43 percent in 1977. The aircraft and missile engine industry showed a similar increase in defense market share, rising from 47 to 78 percent between 1977 and 1985. The defense share of the aircraft and missile parts market remained stable—at about 40 percent—for the period.

Between 1980 and 1985, the volume of aircraft production declined substantially, from 14,660 units costing $18.8 billion to 3,620 units costing $25.4 billion. Of the 3,620 units produced in 1985, 935, or 26 percent, were military. However, while military aircraft cost $17.4 billion, an average unit cost of $18.6 million, civilian aircraft unit costs averaged only $3.0 million.

Total output in the missile industry increased by 35 percent between 1980 and 1985, after declining 8 percent between 1977 and 1980. Of the markets for missiles, defense showed the greatest growth. Civilian markets for missiles include purchases by the National Aeronautics and Space Administration and production used for export. After declining 6 percent over the 1977–80 period, missiles for the military increased 65 percent between 1980 and 1985, while missile output for civilian use declined 12.4 percent. The defense share of missile industry output increased from 67 percent in 1977 to 84 percent in 1985.

This substantial rise in the missile industry's dependence on defense purchases can be attributed to: (1) the 60-percent growth in the defense missile program; (2) a slowdown in the space program; and (3) a decline in exports of space-based services, which include the launching and maintaining of satellites in orbit for communications, navigation, measurement of earth resources, and weather sensing. Between 1970 and 1980, almost all space-based services were provided by U.S. companies. After 1980, however, the European and Japanese space programs provided competition to the U.S. missile industry.

Defense dependent industries with declining output. Several industries, important to defense, had dramatic declines in total output, despite increasing military purchases. For example, total output in the explosives industry declined 28 percent between 1977 and 1980, and fell an additional 23 percent by 1985. Defense purchases of explosives rose 22 percent between 1977 and 1980, increasing the defense

Table 3. Changes in total output and estimated defense output and defense share of total output, by industry, 1977–80 and 1980–85

[In percent]

Industry	Defense output change		Total output change		Defense share of output		
	1977–80	1980–85	1977–80	1980–85	1977	1980	1985
Shipbuilding	44	42	8	-15	45	61	93
Ammunition, large	16	98	-15	70	65	88	88
Ordnance, n.e.c.	-7	83	-28	43	61	79	86
Missiles	-6	65	-8	35	67	69	84
Aircraft and missile engines	14	69	22	-5	47	44	78
Tanks	48	110	13	105	40	68	80
Aircraft	6	80	22	2	43	37	66
Explosives	-19	22	-28	-23	38	41	65
Radio and TV communications	73	73	46	46	36	42	50
Small arms	14	110	-15	15	20	28	48
Aircraft and missile parts	42	67	73	28	38	31	41
Ammunition, small	-13	51	6	17	37	30	38
Machine tools—cutting	228	66	18	-60	3	8	34
Truck trailers	72	114	-16	-23	5	10	29
Engineering instruments	25	56	4	28	19	23	28
Electron tubes	-5	75	-15	-5	12	14	28
Mining, nonferrous, except copper	-4	63	-33	-31	8	11	26
Nonferrous forgings	11	73	88	-16	21	12	25
Transmission equipment	1	66	-56	-28	5	10	24
Optical instruments	71	100	86	51	14	13	24
Turbines	-31	56	1	-53	5	7	23
Aluminum, primary	2	67	-20	-33	7	9	22
Zinc, primary	3	68	-15	-18	9	11	22
Industrial trucks	325	54	11	-46	2	8	22
Electronic components	40	76	27	44	15	16	20
Ferrous forgings	9	74	-7	-13	8	10	19
Copper, primary	3	66	-27	-11	7	10	18
Nonferrous rolling, n.e.c.	28	70	-22	24	8	13	18
Nonmetallic mineral products	37	67	6	-15	7	9	17
Lead, primary	6	63	-4	-36	6	7	17
Castings, nonferrous	15	80	1	5	9	10	17
Copper rolling	0	275	-28	9	5	7	17
Machine tools—forming	290	56	1	-34	2	6	15
Electrometallurgical products	5	63	-10	-34	6	6	15
Ball bearings	-15	68	-60	-27	7	7	15
General industrial machinery	47	57	33	-18	3	8	15
Carbon products	31	67	-1	-37	5	7	15
Screw machine products	12	67	7	-15	6	7	13
Hoists and cranes	52	81	33	-49	3	4	13
Plating and polishing	6	74	4	50	11	11	13
Steel mills	6	63	-13	-20	5	6	12
Boot and shoe stock	1	-35	-18	-24	11	14	12
Conveyors	103	58	10	-25	3	6	12
Copper mining	34	64	6	-14	5	6	11
Industrial controls	5	51	7	-8	5	6	11

n.e.c. = not elsewhere classified

SOURCE: U.S. Department of Commerce, Office of Business Analysis share of the industry's output from 36 to 65 percent. Total output in the cutting machine tool industry declined dramatically, 60 percent, between 1980 and 1985. Defense purchases of machine tools rose 65 percent, increasing the defense market share from 3 percent in 1977 to 34 percent in 1984. Total output in the primary lead industry dropped 36 percent between 1980 and 1985. However, a 63-percent jump in purchases by the military for defense (all indirect purchases) increased the defense share of this industry's output from 6 to 17 percent. The industrial truck industry, through a similar combination of falling total output and increasing defense purchases, showed an increased dependence on defense, from 2 percent in 1977 to 22 percent in 1985. Other industries in this same general situation—declining total output, but increasing output for the military—include nonferrous mining, transmission equipment, ferrous forgings, primary zinc and copper, nonmetallic mineral products, forming machine tools, electrometallurgical products, screw machine products, steel mills, conveyors and conveying equipment, and copper mining.

Defense dependent industries with increasing output. During the latest defense buildup, some industries increased production for both defense and civilian markets. For example, the radio and television communications equipment industry increased its output for all customers by 46 percent, while increasing output for defense by 73 percent. The defense output share, therefore, changed only slightly, from 42 percent in 1980 to 50 percent in 1985. Total output of the engineering and scientific instrument industry increased 28 percent, while defense output increased 55 percent. As a result, the defense market share rose from 23 percent in 1980 to 28 percent in 1985. Total output in the optical instruments industry rose 189 percent, increasing the defense market share from 13 to 24 percent.

Top 20 defense industries. The top defense-supplying industries in terms of real output were identified as producers for whom defense materials account for a large share (40 percent or more) of output; namely, radio and television communications equipment, aircraft, aircraft and missile engines, shipbuilding, missiles, aircraft and missile parts, and tanks. However, as the following tabulation shows, defense is not the major market for the remainder of the top 20:

Industry	*Defense output (billions of 1977 dollars)*	*Defense share (percent)*
Radio and television communications equipment	15.7	50
Aircraft	11.7	66
Wholesale trade	6.3	2
Aircraft and missile engines	5.9	78
Shipbuilding	5.7	93
Missiles	5.3	88
Petroleum refining	5.2	6
Aircraft and missile parts	4.5	41
Crude petroleum	4.3	10
Steel mills	3.4	12
Electronic components	3.0	19
Air transportation	3.0	8
Real estate	2.7	5
Automobiles	2.6	3
Miscellaneous repair shops	2.5	10
Computers	2.3	5
Industrial chemicals	2.0	5
Semiconductors	1.6	5
Railroads	1.5	7
Tanks	1.1	65

Productive capacity. Available data indicate that productive capacity in the durable and nondurable manufacturing industries was not strained to meet military and civilian requirements during the buildup. Fourth-quarter utilization of the durable manufacturing sectors declined from 79 percent in 1977 to 76 percent in 1980 and 74 percent in 1984.[3] Nondurable capacity utilization dropped from 77 percent in 1977 to 72 percent in 1980 and 71 percent in 1984. Defense-intensive industry groups displayed the following capacity utilization rates in 1984: steel, 63 percent; steel foundries, 74 percent; metal forgings, 81 percent; metalworking machinery, 68 percent; communication equipment, 76 percent; aircraft, 60 percent; and instruments and related products, 78 percent.

Effects on employment

Defense employment requirements were estimated directly from the results of the input-output model and include both the direct and indirect jobs in each industry. The defense share of industry output was used as the defense share of actual employment. Thus, for example, if defense output was 20 percent of total industry output, then estimated employment to meet defense needs was assumed to also be 20 percent of actual total industry employment. Differences reflect industry sector aggregation differences between the Commerce and Labor Departments' input-output models. Defense occupational requirements were derived by applying surveyed occupational patterns for 3-digit SIC industries to the defense share of employment in these industries. Thus, the occupational mix of the labor force specializing in defense work was assumed to be the same as that prevailing in the industry as a whole.

Total defense-related employment is estimated to have increased by less than 4 percent from 1977 to 1980, with all of the increase occurring in private sector jobs. From 1980 to 1985, total defense jobs increased almost 22 percent, while private sector jobs attributable to defense purchases increased 45 percent. The 1980–85 defense buildup occurred initially during a period of slow employment growth. Total private and public jobs in 1979 were at 103.6 million and had reached only 104.6 million by 1983. In the 1977–80 period, while defense outlays increased only modestly, total employment grew at an annual average rate of 2.9 percent. Conversely, during the major buildup of 1980–85, total employment grew at half that rate, or 1.4 percent per year. In the private sector, employment increased from 80.0 million in 1977 to 87.5 million in 1980 and 93.3 million in 1985. However, in 1982 and 1983, private employment fell below its 1981 level, because of the recession. Total public jobs increased slightly from 1980 to 1985, as the number of both Federal civilian and State and local government employees increased by about 1 percent. The size of the Armed Forces declined 4 percent from 1977 to 1980 and then increased by about 5 percent from 1980 to 1985. This increase, of course, was substantially less than the increase in defense outlays for this period.

Total defense jobs. All defense-generated jobs were estimated, using the methodology described in the appendix, to have increased only slightly from 1977 to 1980 and then to have grown substantially from 1980 to 1985. Defense-related employment moved counter-cyclically during the recessions of the early 1980's. However, with defense representing only 5 to 6 percent of GNP in that period, defense-related employment increases were not sufficient to offset job losses from declining demand in other sectors. Defense-generated private employment rose from an estimated 2.2 million in 1980 to 3.2 million in 1985. The following tabulation shows estimated defense-related employment (in thousands) in 1977, 1980, and 1985, and the changes over the 1980–85 period:

	1977	*1980*	*1985*	*Change, 1980–85*
Total	5,309	5,498	6,680	1,182
Private	1,913	2,214	3,207	993
Public:				
Armed Forces	2,133	2,041	2,151	110
Federal civilian	1,263	1,243	1,322	79
Percent of total:				
Private	2.4	2.5	3.4	--
Public:				
Armed Forces	100.0	100.0	100.0	—
Federal civilian	46.5	43.4	46.0	—

The defense share of all jobs dropped from 5.5 percent in 1977 to 5.3 percent in 1980, and then increased to 6.0 percent in 1985. The net increase in total jobs in the private sector was 5.8 million over the 1980–85 period, with defense-generated jobs accounting for 17 percent of the increase. Private sector defense jobs, both direct and indirect, represented 2.5 percent of all private jobs in 1980 and 3.4 percent in 1985. Defense accounted for about 5 percent of all manufacturing jobs in 1977, 6 percent in 1980, and about 9 percent in 1985. In durable manufacturing, more than 8 percent of all jobs were generated by defense in 1980 and 14 percent in 1985. Defense-generated jobs in transportation, communications, and public utilities were about 6 percent of the total in 1980, and 4 percent in 1985. Defense-related government civilian jobs, including both civil service and wage board, increased almost 7 percent over the period, accounting for nearly one-half of all Federal civilian jobs. All defense-generated jobs, including the Armed Forces, rose from 5.5 million in 1980 to 6.7 million in 1985, an increase of almost 1.2 million jobs.

Defense jobs in the private sector. In 1977, about 54 percent of defense-generated private employment was concentrated in the manufacturing sector and this share was only slightly higher during the 1980–85 period. Although manufacturing employment declined by almost 1 million from 1980 to 1985, defense requirements added about 600,000 manufacturing jobs. These jobs were primarily in durable manufacturing. In the same period, total jobs in durable manufacturing fell by almost 680,000, while defense-generated jobs in durable manufacturing increased by about 580,000. The service sector accounted for most of the remaining defense-related jobs. Table 4 shows the sector distribution of defense-generated private employment during this major buildup period.

Defense-related industry jobs. Total employment in the five major defense hardware industries increased by 260,000 jobs from 1977 to 1980, reflecting increases in both defense and civil demand.[4] From 1980 to 1985, the total increase in these industries was just 172,000 jobs, as much larger defense orders were offset by drops in civil requirements. The combined employment in ordnance, missiles, aircraft, ships, and communications equipment, where much of the buildup was directed, moved from 1.4 million

Table 4. Estimates of defense-related private employment, by industry, 1977, 1980, and 1985

Sector	1977	1980	1985
Total (thousands)	1,912.6	2,214.2	3,206.8
Agriculture, forestry, and fisheries	25.8	28.7	23.9
Mining	27.5	29.7	48.0
Construction	100.0	76.2	89.0
Manufacturing	1,037.7	1,199.5	1,812.2
Transportation, communications, and utilities	163.9	180.9	211.2
Trade	177.4	224.3	310.0
Finance and insurance	43.5	43.9	58.9
Services	336.9	430.9	653.6
	Percent distribution		
Total	100.0	100.0	100.0
Agriculture, forestry, and fisheries	1.4	1.3	.8
Mining	1.4	1.3	1.5
Construction	5.2	3.4	2.8
Manufacturing	54.3	54.2	56.5
Transportation, communications, and utilities	8.6	8.2	6.6
Trade	9.3	10.1	9.7
Finance and insurance	2.3	2.0	1.8
Services	17.6	19.5	20.4

NOTE: Employment includes wage and salary workers, self-employed and unpaid family workers, but excludes those in government and the Armed Forces.
SOURCE: Estimates derived using methodology described in appendix.

in 1980 to 1.6 million in 1985. The defense portion of employment in these industries increased by almost 400,000 jobs. (See table 5.) This apparent unresponsiveness of total employment in these hardware industries primarily reflects significant drops in civil demand for aircraft and shipbuilding after 1981. Aircraft employment dropped by 66,000 from 1980 to 1983, while the defense jobs in this industry increased by 48,000. Similarly, defense jobs in shipbuilding increased by almost 24,000 from 1980 to 1983, as total industry jobs dropped by 34,000. Total employment in the aircraft industry did not turn around until 1984, when increased military shipments coincided with a reviving economy. Aircraft employment did not reach the 1980 level until 1985. Shipbuilding jobs in 1985 were 32,000 less than in 1980 as the industry continued to suffer from weak civil demand.

The defense share of employment of these industries, of course, increased substantially from 1977 to 1985. In the overall ordnance industry, including tanks, defense moved from 45 percent of the total in 1977 to 60 percent in 1980 and 70 percent in 1985. About two-thirds of the jobs in the missile-space industry were attributable to defense in 1977 and in 1980, but in 1985, the portion rose to more than 80 percent. Defense employment in the aircraft and parts industry accounted for 43 percent of the total in 1977 and only 37 percent in 1980 during substantial commercial production. This share increased to more than 60 percent in 1985. Defense-related shipbuilding employment was only 31 percent of the industry's jobs in 1977, but rose to almost 50 percent in 1980 and 85 percent in 1985, as defense orders increased and commercial business continued to decline.

There was a net increase in defense-generated jobs in the private sector of almost 1 million jobs from 1980 to 1985; only a few industries showed a drop in defense-related jobs. The 20 industries adding the most direct and indirect jobs in this period accounted for about three-quarters of this total or an estimated 744,000 jobs. (See table 6.) These industries were about equally divided between durable manufacturing and service industries. The manufacturing industries generally reflected cases where the increased defense demand was a significant part of total output. However, the service industries, in most cases, reflected much larger employment bases, with increased defense requirements accounting for only a small percent of total output.

Table 5. Estimates of defense employment in major defense industries, 1977, 1980, and 1985

Industry	1977	1980	1985
Total defense (in thousands)	471.6	624.1	1,018.9
Ordnance	30.9	44.3	69.1
Missiles, space	44.4	60.4	112.9
Communications equipment	110.8	157.9	254.6
Aircraft	214.9	251.5	419.3
Shipbuilding	70.6	110.0	163.0
	Percent of industry		
Ordnance	44.8	59.9	70.5
Missiles, space	67.3	68.7	84.2
Communications equipment	35.2	41.8	49.6
Aircraft	43.0	37.2	62.0
Shipbuilding	30.7	49.3	85.3

SOURCE: Estimates derived using methodology described in appendix.

Table 6. Industries with largest estimated growth in defense-related employment, 1980 and 1985
[In thousands]

Industry	1980	1985	Increase
Total	1,312.2	2,055.7	743.5
Aircraft	251.5	419.3	167.8
Communications equipment	157.9	254.6	96.7
Business services	137.8	234.1	96.3
Wholesale trade	143.3	203.3	60.0
Shipbuilding, repair	110.0	163.0	53.0
Missiles, space vehicles	60.4	112.9	52.5
Hotels, lodging places	41.8	69.7	27.9
Professional services	49.2	75.0	25.8
Ordnance	44.3	69.1	24.8
Eating, drinking places	65.8	88.8	23.0
Educational services	62.4	83.1	20.7
Metalworking machinery	20.3	35.3	15.0
Truck transportation	45.6	59.7	14.1
Crude petroleum	14.1	26.8	12.7
Transportation services	13.4	25.9	12.5
Maintenance, repair construction	42.9	52.3	9.4
Nonelectrical machinery	13.4	22.0	8.6
Electrical industrial apparatus	12.1	19.8	7.7
Optical equipment	7.9	15.5	7.6
Personal, repair services	18.1	25.5	7.4

NOTE: Employment is total of all workers. Industries are generally 3-digit divisions from the *Standard Industrial Classification Manual*.

SOURCE: Estimates derived using methodology described in appendix.

The direct and indirect employment effects of defense outlays during the buildup appear to have principally benefited the "smokestack," or durable goods manufacturing industries. The industries with 10 percent or more of their jobs attributable to defense in 1985 were all in durable manufacturing. These included the defense equipment, metals, and metalworking equipment industries. Service industries, in general, had 3 percent or less of their employment generated by defense purchases. Of the 17 most defense-dependent industries shown in the following tabulation, the 5 major hardware industries had, by far, the highest percentage of defense jobs, generally more than 50 percent. The optical industry had an estimated 24 percent of its employment in 1985 attributable to defense purchases. The other industries, largely metals and metalworking, had a little more than 10 percent of their jobs in defense production.

	Percent of defense-generated jobs
Shipbuilding, repair	85.3
Missiles, space vehicles	84.2
Ordnance	70.5
Aircraft	62.0
Communications equipment	49.6
Other nonferrous mining	25.7

Optical equipment	24.3
Material handling equipment	14.4
Screw machine products	13.1
Copper mining	13.0
Iron ore mining	12.8
Scientific, control instruments	12.4
Primary nonferrous metal products	11.7
Primary aluminum products	11.5
Blast furnaces, steel products	11.3
Iron, steel foundries, forgings	11.3
Metalworking machinery	11.1

Occupational distribution of defense employment. The distribution of defense jobs by occupational group, as shown in table 7, remained relatively stable from 1977 to 1985. The percent of defense jobs in each group shows insignificant year-to-year variations. The pattern for defense jobs, however, was different from the distribution for overall manufacturing. Substantially more professional and technical workers, including engineers, scientists, and technicians, were required in defense jobs than the average for total manufacturing jobs. Relatively more administrative support workers, including clerical and computer support jobs, were required in defense production, as well as service workers. However, substantially fewer machine setters and operators and handworkers were required. The jobs added during the defense buildup were primarily in the managerial, administrative support, professional, and technical and service groupings.

Table 8 shows that occupations with 10 percent or more of defense-related jobs in 1985 were largely in metalworking, equipment assembly, and the professional and technical categories. The most defense-dependent occupation was the precision aircraft assembler, with an estimated 70 percent of their jobs in defense production. Electrical installers and shipfitters followed closely, with over three-fifths their jobs related to defense. Almost one-half of the aeronautical and astronautical engineer jobs were in defense production. Defense job requirements for milling machine setters and operators and wood pattern and mold makers were over one-fifth of the total in these occupations. About 19 percent of rigger jobs, numerical control machine tool operators, and metallurgical engineers were defense-related in 1985. □

Table 7. Estimates of defense-related employment by occupational group, 1977, 1980, and 1985

Occupation	1977	1980	1985
Total (thousands)	1,801	2,087	2,897
Managers	190	224	316
Professionals, technical	240	310	437
Marketing, sales	73	84	116
Administrative support	306	355	490
Services	143	183	261
Mechanics, installers	85	99	133
Precision production	114	134	191
Machine setters, operators	186	194	269
Handworkers	146	174	243
Construction trades	57	58	78
Transportation operators	94	94	125
Helpers	92	96	128
Others	75	83	110
	Percent distribution		
Total	100.0	100.0	100.0
Managers	10.5	10.7	10.9
Professionals, technical	13.3	14.8	15.1
Marketing, sales	4.1	4.0	4.0
Administrative support	17.0	17.0	16.9
Services	8.0	8.8	9.0
Mechanics, installers	4.7	4.8	4.6
Precision production	6.4	6.4	6.6
Machine setters, operators	10.3	9.3	9.3
Handworkers	8.1	8.4	8.4
Construction trades	3.2	2.8	2.7
Transportation operators	5.2	4.5	4.3
Helpers	5.1	4.6	4.4
Others	4.2	4.0	3.8

NOTE: Occupational employment is based upon wage and salary jobs, while industry employment also includes the self-employed and unpaid family workers and is somewhat higher.

SOURCE: Estimates derived using methodology described in appendix.

Table 8. Occupations estimated to have a high percentage of defense jobs, 1985

Occupation	Defense jobs (in thousands)	Percent defense
Precision aircraft assemblers	14.7	70.0
Shipfitters	8.9	63.6
Electrical installers, repairers	3.7	61.7
Aero, astronautical engineers	22.2	46.3
Milling machine setters, operators	8.4	24.0
Pattern, model makers, wood	2.4	21.8
Riggers	4.1	18.6
Numerical control machine tool operators	10.8	18.6
Metallurgical engineers	3.5	18.4
Electric, electronic equipment precision assemblers	30.7	17.4
Numerical control tool programmers	1.9	17.3
Mechanical engineering technicians	8.9	16.2
Heating equipment setters, operators	1.3	16.2
Pattern, model workers, metal	2.1	16.1
Lathe machine setters, operators	15.5	15.8
Electric, electronic engineers	57.9	15.1
Inspectors, testers, precision	37.4	14.7
Industrial engineers	18.1	14.6
Industrial engineering technicians	3.9	14.4
Sewing machine setters, metal and plastic	2.6	14.4
Electric, electronic assemblers	37.0	14.3
Drilling machine setters, operators	8.8	13.7
Grinding machine setters, operators	12.3	13.4
Heat treating machine operators, metal and plastic	2.8	13.3
Tool and die makers	20.7	12.8
Aircraft mechanics	13.1	12.7
Mechanical engineers	29.3	12.6
Machinists	43.5	12.5
Production clerks	28.4	12.4
Welders, cutters	32.3	11.6
Precision layout workers, metal	2.4	11.4
Founding mold workers	2.1	11.1
Electronic semiconductors processors	3.3	11.0

SOURCE: Estimates derived using methodology described in appendix.

—*FOOTNOTES*—

[1] This article summarizes a study conducted jointly by the U.S. Department of Commerce's Office of Business Analysis and the Bureau of Labor Statistics' Office of Economic Growth and Employment Projections, to estimate the output and employment effects on U.S. industries of the increases in defense spending which began in 1977. The study uses the total industry production as published by the Bureau of the Census and total industry employment as published by the Bureau of Labor Statistics. The defense portion of production and employment is estimated using interindustry models which attempt to capture the relationship between defense purchases, industry production levels, and associated employment requirements.

[2] Industries analyzed in the production analysis are classified by the 537-sector 1977 Bureau of Economic Analysis Input-Output table. These sectors are basically 4-digit Standard Industrial Classification sectors. However, of the major defense industries, Aircraft (SIC 3724) and Missile Engines and Engine Parts (SIC 3764) are combined as well as Aircraft (SIC 3728) and Missile Parts (SIC 3769).

[3] *Survey of Plant Capacity*, Annual Report, MQ(C)-1 (Bureau of the Census, 1985). It should be noted, however, that capacity utilization measures are subject to considerable doubt and controversy. The preferred rate of capacity utilization (the level of plant operations which produces maximum profits) published by the Census Bureau and summarized in the text is the result of industry surveys and subject to interpretation by respondents. The capacity utilization estimates are also fourth-quarter rates, and do not reflect annual averages.

[4] Industry sectors used in the employment model are broader or consist of more aggregate categories than those used in the more detailed production model, except for Missiles (SIC 3761) and Radio and Television Communication Equipment (SIC 3662). Shipbuilding is all of SIC 373, Ordnance includes SIC 348 and 3795, and Aircraft and Parts includes SIC 372, 3764, and 3769.

APPENDIX: Methodology

Federal Government spending for national defense is allocated to budget programs from the Department of Defense outlay budget. The budget outlay data, originally in current Federal fiscal year dollars, were deflated to constant 1977 dollars and converted to calendar years. The deflation is accomplished using a combination of Office of Management and Budget and Department of Commerce defense program price deflators. The Commerce Department's defense program deflators incorporate the detailed distribution of expenditures for each of the programs.

The budget outlay data are broken down into categories of industrial final demands using a series of bridge tables developed by the Commerce Department. These bridge tables break down defense budget outlay categories to industrial composition of what defense buys, using an assumed distribution of spending within a budget category. That distribution is based on spending patterns of prior years.

The estimates of final defense demand were verified whenever possible. Estimates of defense demands were compared with actual data or other estimates. The Census Bureau collects and reports direct shipments to Federal Government agencies. Some estimates are made in Commerce's annual *U.S. Industrial Outlook*, and separate estimates are also made by the Defense Department.

Indirect defense production requirements are calculated using the 1977 Bureau of Economic Analysis 537-sector input-output matrix. The input-output matrix multiplication estimates the interindustry transactions necessary to supply the military. The defense final demands, calculated using the series of bridge tables described above, are multiplied by the matrix to provide the estimate of total output for defense production.

Defense employment in the private sector was estimated using the total direct and indirect production requirements for each industry as developed in the interindustry model. Labor models were then applied to the gross outputs of each industry to develop labor requirements. The models are all based on linear relationships that determine average requirements for each industry. An increase in purchases made by any demand sector is assumed, therefore, to require a proportional increase in output and labor requirements. Thus, for example, if 20 percent of industry output is estimated to be devoted to defense-generated production, the employment estimates assume that 20 percent of industry employment is also defense-related. The labor models required an aggregation of the 537 producing industries used in the step to derive production requirements to employment for 378 industries and 550 occupations.

Representative **Hamilton**. And then contingent work force——

Mrs. **Norwood**. Mr. Bregger tells me that in the second quarter of 1989, the proportion of married-couple families with children with the husband only employed is 23 percent.

Representative **Hamilton**. Twenty-three percent. And going down.

Mrs. **Norwood**. Yes.

Mr. **Bregger**. It was 24 percent last year.

Representative **Hamilton**. I see. My gosh.

And on contingent workers, part-time or temporary workers, they're at greater risk, I presume, of losing their jobs in a time of slower growth or recession, aren't they?

Mrs. **Norwood**. Yes, indeed, they are.

It's difficult to define that group and we've been struggling with that and we in fact have an article that will be coming out in the Monthly Labor Review on the issues involved in the measurement of contingent workers.

Representative **Hamilton**. Is it also true that contingent workers are more likely to be female and black and Hispanic?

Mrs. **Norwood**. I would guess so, yes.

Representative **Hamilton**. And the corollary of that then is that the white male has greater job security than the others.

Mrs. **Norwood**. Probably.

Representative **Hamilton**. And higher benefits.

The bells have rung for a vote. Thank you very much for your appearance.

I think next month this hearing falls on September 1 and we're not certain at this point whether Members will be here. We'll be in touch with you about that.

Mrs. **Norwood**. All right.

Representative **Hamilton**. I hope we can go ahead with it. But we'll have to make arrangements with you.

Mrs. **Norwood**. Fine. All right.

Representative **Hamilton**. Thank you very much. We stand adjourned.

[Whereupon, at 10:34 a.m., the committee adjourned, subject to the call of the Chair.]

EMPLOYMENT-UNEMPLOYMENT

FRIDAY, OCTOBER 6, 1989

Congress of the United States,
Joint Economic Committee,
Washington, DC.

The committee met, pursuant to notice, at 9:32 a.m., in room SD-562, Dirksen Senate Office Building, Hon. Richard H. Bryan (member of the committee) presiding.

Present: Senator Bryan.

Also present: William Buechner, Jim Klumpner, and Chris Frenze, professional staff members.

OPENING STATEMENT OF SENATOR BRYAN, PRESIDING

Senator **Bryan**. This morning the Joint Economic Committee is very pleased to welcome once again Commissioner Janet Norwood and her colleagues from the Bureau of Labor Statistics. They are here to testify on the employment and unemployment situation for September.

According to the Employment Situation release of this morning, the unemployment rate rose to 5.3 percent in September from 5.2 percent in August, which keeps unemployment about where it has been through most of 1989.

There was also a decline of about 140,000 in the number of people who reported having jobs.

The most important news for the month appears to be in the payroll employment figures which indicate that 103,000 manufacturing jobs were lost in September. This job loss seems to have been widespread and cannot be attributed to problems in any particular industry.

Total payroll employment was up 135,000 in September, excluding the return of the striking telephone workers, which is the third month in a row of weak job growth.

We are pleased to have once again with us this morning Mrs. Norwood, who will share with us her analysis of these figures.

Mrs. Norwood, good morning to you and to your colleagues. We will hear from you now.

STATEMENT OF HON. JANET L. NORWOOD, COMMISSIONER, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, ACCOMPANIED BY THOMAS J. PLEWES, ASSOCIATE COMMISSIONER, OFFICE OF EMPLOYMENT AND UNEMPLOYMENT STATISTICS; AND KENNETH V. DALTON, ASSOCIATE COMMISSIONER, OFFICE OF PRICES AND LIVING CONDITIONS

Mrs. Norwood. Thank you.

I have with me Thomas Plewes, on my left, who is our Associate Commissioner for Employment and Unemployment Statistics; and on my right, Ken Dalton, who is our Associate Commissioner for Prices and Living Conditions.

We are very pleased to be here this morning.

Employment showed little growth in September, and the unemployment rate remained within the narrow range in which it has been since the beginning of the spring. The overall jobless rate, at 5.2 percent, and the civilian worker rate, at 5.3 percent, were both about the same as the 5.1 and 5.2 percent figures of the previous month.

A slowdown in job growth can be seen in both of our surveys. The number of jobs reported in the business survey rose by 210,000 in September, but about 75,000 of that increase represented a return to company payrolls of workers who had been on strike in August. The household survey's estimate of total civilian employment was essentially unchanged in September and, in fact, has not shown any real growth since June.

The most disturbing feature of September's business survey data was the large decline in manufacturing employment—105,000. One-third of this decline took place in automobile factories, where inventory controls have led to wide fluctuations in employment levels over recent months. Real growth in overall factory employment ended last March; since then, we have lost 135,000 factory jobs. Several individual manufacturing industries have had small job losses for several months, and these were joined by others in September, as 16 of the 20 major manufacturing industries experienced declines after seasonal adjustment. Further evidence of weakness comes from the manufacturing diffusion index, which shows that twice as many of the 141 industries included in the index experienced job losses as had job gains. In spite of these developments, however, it should be noted that the factory workweek remains near its all-time high.

September employment in the construction industry was unchanged from August. Since the beginning of the year, the number of construction jobs has increased by only about 50,000. Employment dipped slightly in the mining industry, but remained about 15,000 above the January level.

The real strength in the September numbers was in the services industry, where about 105,000 jobs were added from August to September. Employment in business and health services increased by 45,000 each. This was a very strong job gain for business services, the biggest actually in a year and a half. The return to work of strikers, mostly in the telephone industry, accounted for nearly all of the 90,000 increase in transportation and public utilities. Most of the 95,000 increase in government employment represented an expansion in local education at the beginning of the school year.

Little movement has occurred in most of the household survey measures in recent months, and the trend continued in September. The civilian jobless rate has been 5.2 or 5.3 percent in every month since April, and the quarterly rates have actually been in that narrow range for a full year now. The proportion of the population that is at work, although somewhat lower than in recent months, is still near its record high. In September, the unemployment rate for adult women fell a bit to 4.5 percent, but the jobless rate for adult men rose 0.4 of a percentage point to 4.8 percent. And the volatile rate for black teenagers jumped to 37.3 percent.

Data on discouraged workers, covering the third quarter of the year, were published this morning. There were 815,000 discouraged workers in the third quarter of 1989; the series has been trending downward slowly, with the decline totaling 115,000 over the year.

In summary, the labor market data released today show widespread employment weaknesses in manufacturing, but continued strength in the services industry. The unemployment rate remains close to 5 percent, the lowest range it has been at in 15 years.

We would be glad to try to answer any questions.

[The table attached to Mrs. Norwood's statement, together with the Employment Situation press release, follows:]

Unemployment rates of all civilian workers by alternative seasonal adjustment methods

Month and year	Unadjusted rate	X-11 ARIMA method							X-11 method (official method before 1980)	Range (cols. 2-9)
		Official procedure	Concurrent (as first computed)	Concurrent (revised)	Stable	Total	Residual	12-month extrapolation		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1988										
September...	5.2	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	-
October.....	5.0	5.3	5.3	5.3	5.3	5.3	5.4	5.3	5.3	.1
November....	5.2	5.4	5.4	5.3	5.4	5.3	5.4	5.4	5.4	.1
December....	5.0	5.3	5.3	5.3	5.3	5.3	5.4	5.3	5.4	.1
1989										
January.....	6.0	5.4	5.4	5.4	5.5	5.4	5.3	5.4	5.5	.2
February....	5.6	5.1	5.2	5.2	5.2	5.2	5.0	5.1	5.2	.2
March.......	5.2	5.0	5.0	5.0	5.0	5.0	4.8	5.0	5.0	.2
April.......	5.1	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	-
May.........	5.0	5.2	5.2	5.2	5.2	5.1	5.3	5.2	5.1	.2
June........	5.5	5.3	5.3	5.3	5.2	5.4	5.4	5.3	5.3	.2
July........	5.3	5.2	5.2	5.3	5.2	5.3	5.3	5.3	5.3	.1
August......	5.1	5.2	5.2	5.2	5.1	5.2	5.3	5.2	5.2	.2
September...	5.1	5.3	5.3	5.3	5.3	5.3	5.2	5.3	5.3	.1

SOURCE: U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
October 1989

(1) Unadjusted rate. Unemployment rate for all civilian workers, not seasonally adjusted.

(2) Official procedure (X-11 ARIMA method). The published seasonally adjusted rate for all civilian workers. Each of the 3 major civilian labor force components—agricultural employment, nonagricultural employment and unemployment—for 4 age-sex groups—males and females, ages 16-19 and 20 years and over—are seasonally adjusted independently using data from January 1974 forward. The data series for each of these 12 components are extended by a year at each end of the original series using ARIMA (Auto-Regressive, Integrated, Moving Average) models chosen specifically for each series. Each extended series is then seasonally adjusted with the X-11 portion of the X-11 ARIMA program. The 4 teenage unemployment and nonagricultural employment components are adjusted with the additive adjustment model, while the other components are adjusted with the multiplicative model. The unemployment rate is computed by summing the 4 seasonally adjusted unemployment components and calculating that total as a percent of the civilian labor force total derived by summing all 12 seasonally adjusted components. All the seasonally adjusted series are revised at the end of each year. Extrapolated factors for January-June are computed at the beginning of each year; extrapolated factors for July-December are computed in the middle of the year after the June data become available. Each set of 6-month factors are published in advance, in the January and July issues, respectively, of Employment and Earnings.

(3) Concurrent (as first computed, X-11 ARIMA method). The official procedure for computation of the rate for all civilian workers using the 12 components is followed except that extrapolated factors are not used at all. Each component is seasonally adjusted with the X-11 ARIMA program each month as the most recent data become available. Rates for each month of the current year are shown as first computed; they are revised only once each year, at the end of the year when data for the full year become available. For example, the rate for January 1984 would be based, during 1984, on the adjustment of data from the period January 1974 through January 1984.

(4) Concurrent (revised, X-11 ARIMA method). The procedure used is identical to (3) above, and the rate for the current month (the last month displayed) will always be the same in the two columns. However, all previous months are subject to revision each month based on the seasonal adjustment of all the components with data through the current month.

(5) Stable (X-11 ARIMA method). Each of the 12 civilian labor force components is extended using ARIMA models as in the official procedure and then run through the X-11 part of the program using the stable option. This option assumes that seasonal patterns are basically constant from year-to-year and computes final seasonal factors as unweighted averages of all the seasonal-irregular components for each month across the entire span of the period adjusted. As in the official procedure, factors are extrapolated in 6-month intervals and the series are revised at the end of each year. The procedure for computation of the rate from the seasonally adjusted components is also identical to the official procedure.

(6) Total (X-11 ARIMA method). This is one alternative aggregation procedure, in which total unemployment and civilian labor force levels are extended with ARIMA models and directly adjusted with multiplicative adjustment models in the X-11 part of the program. The rate is computed by taking seasonally adjusted total unemployment as a percent of seasonally adjusted total civilian labor force. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(7) Residual (X-11 ARIMA method). This is another alternative aggregation method, in which total civilian employment and civilian labor force levels are extended using ARIMA models and then directly adjusted with multiplicative adjustment models. The seasonally adjusted unemployment level is derived by subtracting seasonally adjusted employment from seasonally adjusted labor force. The rate is then computed by taking the derived unemployment level as a percent of the labor force level. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(8) X-11 method (official method before 1980). The method for computation of the official procedure is used except that the series are not extended with ARIMA models and the factors are projected in 12-month intervals. The standard X-11 program is used to perform the seasonal adjustment.

Methods of Adjustment: The X-11 ARIMA method was developed at Statistics Canada by the Seasonal Adjustment and Times Series Staff under the direction of Estela Bee Dagum. The method is described in The X-11 ARIMA Seasonal Adjustment Method, by Estela Bee Dagum, Statistics Canada Catalogue No. 12-564E, February 1980.

The standard X-11 method is described in X-11 Variant of the Census Method II Seasonal Adjustment Program, by Julius Shiskin, Allan Young and John Musgrave (Technical Paper No. 15, Bureau of the Census, 1967).

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THE EMPLOYMENT SITUATION: SEPTEMBER 1989

Payroll employment showed little growth and unemployment was about unchanged in September, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. The overall jobless rate was 5.2 percent and the civilian worker rate was 5.3 percent; they had been 5.1 and 5.2 percent, respectively, in August.

Nonagricultural payroll employment, as measured by the survey of business establishments, rose by 210,000 in September to 109.1 million, but about 75,000 of the increase represented a return to work of persons who had been on strike. Total civilian employment, as measured by the survey of households, was about unchanged over the month.

Unemployment (Household Survey Data)

The number of persons unemployed, 6.6 million, and the civilian worker unemployment rate, 5.3 percent, were essentially unchanged in September. Both measures have shown little movement since the spring. Jobless rates were about unchanged over the month for teenagers (15.1 percent), whites (4.5 percent), Hispanics (8.3 percent), and blacks (11.6 percent), although the rate for black teenagers rose to 37.3 percent. While the unemployment rate for adult men increased 0.4 percentage point to 4.8 percent, the rate for adult women edged down to 4.5 percent. (See tables A-2 and A-3.)

Civilian Employment and the Labor Force (Household Survey Data)

Total civilian employment was virtually unchanged in September at a seasonally adjusted level of 117.5 million. At 62.9 percent, the employment-population ratio (the proportion of the working-age population that was employed) remained close to the level that has held throughout 1989. (See table A-2.)

The civilian labor force (124.0 million) and the labor force participation rate (66.4 percent) were also about the same as in the previous month, after seasonal adjustment. The labor force has increased by 2.0 million over the past 12 months. (See table A-2.)

Table A. Major indicators of labor market activity, seasonally adjusted

Category	Quarterly averages		Monthly data			Aug.-Sept. change
	1989		1989			
	II	III	July	Aug.	Sept.	
HOUSEHOLD DATA	Thousands of persons					
Labor force 1/	125,464	125,690	125,622	125,706	125,742	36
Total employment 1/	118,964	119,189	119,125	119,285	119,158	-127
Civilian labor force	123,790	124,005	123,956	124,018	124,040	22
Civilian employment	117,289	117,504	117,459	117,597	117,456	-141
Unemployment	6,501	6,501	6,497	6,421	6,584	163
Not in labor force	62,388	62,597	62,527	62,580	62,686	106
Discouraged workers	869	815	N.A.	N.A.	N.A.	N.A.
	Percent of labor force					
Unemployment rates:						
All workers 1/	5.2	5.2	5.2	5.1	5.2	0.1
All civilian workers	5.3	5.2	5.2	5.2	5.3	.1
Adult men	4.4	4.5	4.3	4.4	4.8	.4
Adult women	4.8	4.7	5.0	4.7	4.5	-.2
Teenagers	15.1	14.8	14.7	14.5	15.1	.6
White	4.5	4.5	4.6	4.5	4.5	.0
Black	11.2	11.2	10.9	11.1	11.6	.5
Hispanic origin	8.1	8.8	9.0	9.0	8.3	-.7
ESTABLISHMENT DATA	Thousands of jobs					
Nonfarm employment	108,339	p108,895	108,767	p108,855	p109,064	p209
Goods-producing	25,664	p25,651	25,669	p25,696	p25,588	p-108
Service-producing	82,676	p83,244	83,098	p83,159	p83,476	p317
	Hours of work					
Average weekly hours:						
Total private	34.7	p34.7	34.8	p34.6	p34.6	p0
Manufacturing	41.1	p41.0	41.0	p40.9	p41.0	p0.1
Overtime	3.8	p3.8	3.9	p3.7	p3.8	p.1

1/ Includes the resident Armed Forces. p=preliminary.
N.A.=not available.

Discouraged Workers (Household Survey Data)

At a seasonally adjusted level of 815,000 in the July-September period, the number of discouraged workers--persons who want to work but have not looked for jobs because they believe they cannot find any--was about unchanged from the second quarter. Over the past year, the number of discouraged workers has declined by about 115,000. (See table A-14.)

Industry Payroll Employment (Establishment Survey Data)

Total nonagricultural payroll employment increased by 210,000 in September to 109.1 million, seasonally adjusted. This increase would have been much smaller if not for the return to payrolls of about 75,000 workers involved in strikes in August. The diffusion index of 349 industries fell below 50 percent, indicating that more industries lost than gained jobs in September. (See tables B-1 and B-6.)

In the goods-producing sector, factory employment fell by 105,000. Whereas the bulk of the decrease occurred in the durable goods sector, it was very widespread, with 16 of the 20 individual manufacturing industries showing employment reductions. The largest occurred in the auto industry--35,000. Employment in the electrical equipment industry fell by 10,000 over the month and has declined by 55,000 since last November. In primary metals, where employment had changed little since late last year, the number of workers fell by 10,000 in September. Fabricated metal products has had small job losses for 7 consecutive months. Employment in apparel and other textile products fell by 10,000 over the month, returning to last October's employment level. The mining industry also showed a small job loss, while construction employment was unchanged for the second consecutive month.

In the service-producing sector, employment in transportation and public utilities increased by 90,000 over the month, primarily reflecting the return to work of telephone workers from strikes. Services industry employment rose by 105,000, as both business and health services showed strong job gains of 45,000. Government employment was also a strong gainer, with an increase of 95,000 over the month; most of this occurred in local education. Finance, insurance, and real estate employment grew by 10,000 in September. Wholesale trade showed a small job gain, while employment in retail trade was little changed; job growth in these two industries has been quite slow for most of this year.

Despite the slower growth in recent months, total payroll employment in September was nearly 2.9 million above its year-ago level. Virtually all of this gain--2.6 million--took place in the service-producing sector.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonagricultural payrolls was unchanged in September at 34.6 hours, seasonally adjusted. The manufacturing workweek and factory overtime both edged up 0.1 hour to 41.0 and 3.8 hours, respectively, offsetting small decreases in the previous month. (See table B-2.)

The index of aggregate weekly hours of private production or nonsupervisory workers rose 0.2 percent in September to 128.6 (1977=100), after seasonal adjustment. This follows a decrease of 0.6 percent in the previous month. The manufacturing index fell 0.7 percent to 95.6. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Both average hourly and average weekly earnings of private production or nonsupervisory workers increased 0.5 percent in September, after seasonal adjustment. Prior to seasonal adjustment, average hourly earnings rose 16 cents to $9.76 and average weekly earnings increased $3.63 to $338.67, as many youths earning comparatively low wages left summer jobs and returned to school. Over the year, average hourly earnings increased by 3.8 percent, while average weekly earnings rose 3.5 percent. (See tables B-3 and B-4.)

The Employment Situation for October 1989 will be released on Friday, November 3, at 8:30 A.M. (EST).

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics Survey (establishment survey). The household survey provides the information on the labor force, total employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 55,800 households that is conducted by the Bureau of the Census with most of the findings analyzed and published by the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonagricultural payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. The sample includes over 300,000 establishments employing over 38 million people.

For both surveys, the data for a given month are actually collected for and relate to a particular week. In the household survey, unless otherwise indicated, it is the calendar week that contains the 12th day of the month, which is called the survey week. In the establishment survey, the reference week is the pay period including the 12th, which may or may not correspond directly to the calendar week.

The data in this release are affected by a number of technical factors, including definitions, survey differences, seasonal adjustments, and the inevitable variance in results between a survey of a sample and a census of the entire population. Each of these factors is explained below.

Coverage, definitions, and differences between surveys

The sample households in the household survey are selected so as to reflect the entire civilian noninstitutional population 16 years of age and older. Each person in a household is classified as employed, unemployed, or not in the labor force. Those who hold more than one job are classified according to the job at which they worked the most hours.

People are classified as *employed* if they did any work at all as paid civilians; worked in their own business or profession or on their own farm; or worked 15 hours or more in an enterprise operated by a member of their family, whether they were paid or not. People are also counted as employed if they were on unpaid leave because of illness, bad weather, disputes between labor and management, or personal reasons. Members of the Armed Forces stationed in the United States are also included in the employed total.

People are classified as *unemployed*, regardless of their eligibility for unemployment benefits or public assistance, if they meet all of the following criteria: They had no employment during the survey week; they were available for work at that time; and they made specific efforts to find employment sometime during the prior 4 weeks. Persons laid off from their former jobs and awaiting recall and those expecting to report to a job within 30 days need not be looking for work to be counted as unemployed.

The *labor force* equals the sum of the number employed and the number unemployed. The *unemployment rate* is the percentage of unemployed people in the labor force (civilian plus the resident Armed Forces). Table A-5 presents a special grouping of seven measures of unemployment based on varying definitions of unemployment and the labor force. The definitions are provided in the table. The most restrictive definition yields U-1 and the most comprehensive yields U-7. The overall unemployment rate is U-5a, while U-5b represents the same measure with a civilian labor force base.

Unlike the household survey, the establishment survey only counts wage and salary employees whose names appear on the payroll records of nonagricultural firms. As a result, there are many differences between the two surveys, among which are the following:

— The household survey, although based on a smaller sample, reflects a larger segment of the population; the establishment survey excludes agriculture, the self-employed, unpaid family workers, private household workers, and members of the resident Armed Forces;

— The household survey includes people on unpaid leave among the employed; the establishment survey does not;

— The household survey is limited to those 16 years of age and older; the establishment survey is not limited by age;

— The household survey has no duplication of individuals, because each individual is counted only once; in the establishment survey, employees working at more than one job or otherwise appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from the BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the Nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. For example, the labor force increases by a large number each June, when schools close and many young people enter the job market. The effect of such seasonal variation can be very large; over the course of a year, for example, seasonality may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. To return to the school's-out example, the large number of people entering the labor force each June is likely to obscure any other changes that have taken place since May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

Measures of labor force, employment, and unemployment contain components such as age and sex. Statistics for all employees, production workers, average weekly hours, and average hourly earnings include components based on the employer's industry. All these statistics can be seasonally adjusted either by adjusting the total or by adjusting each of the components and combining them. The second procedure usually yields more accurate information and is therefore followed by BLS. For example, the seasonally adjusted figure for the labor force is the sum of eight seasonally adjusted civilian employment components, plus the resident Armed Forces total (not adjusted for seasonality), and four seasonally adjusted unemployment components; the total for unemployment is the sum of the four unemployment components; and the overall unemployment rate is derived by dividing the resulting estimate of total unemployment by the estimate of the labor force.

The numerical factors used to make the seasonal adjustments are recalculated regularly. For the household survey, the factors are calculated for the January-June period and again for the July-December period. For the establishment survey, updated factors for seasonal adjustment are calculated for 6 months, along with the introduction of new benchmarks, which are discussed at the end of the next section, and again with the release of data for October. In both surveys, revisions to data published over the previous 5 years are made once a year.

Sampling variability

Statistics based on the household and establishment surveys are subject to sampling error, that is, the estimate of the number of people employed and the other estimates drawn from these surveys probably differ from the figures that would be obtained from a complete census, even if the same questionnaires and procedures were used. In the household survey, the amount of the differences can be expressed in terms of standard errors. The numerical value of a standard error depends upon the size of the sample, the results of the survey, and other factors. However, the numerical value is always such that the chances are approximately 68 out of 100 that an estimate based on the sample will differ by no more than the standard error from the results of a complete census. The chances are approximately 90 out of 100 that an estimate based on the sample will differ by no more than 1.6 times the standard error from the results of a complete census. At approximately the 90-percent level of confidence—the confidence limits used by BLS in its analyses—the error for the monthly change in total employment is on the order of plus or minus 358,000; for total unemployment it is 224,000; and, for the overall unemployment rate, it is 0.19 percentage point. These figures do not mean that the sample results are off by these magnitudes but, rather, that the chances are approximately 90 out of 100 that the "true" level or rate would not be expected to differ from the estimates by more than these amounts.

Sampling errors for monthly surveys are reduced when the data are cumulated for several months, such as quarterly or annually. Also, as a general rule, the smaller the estimate, the larger the sampling error. Therefore, relatively speaking, the estimate of the size of the labor force is subject to less error than is the estimate of the number unemployed. And, among the unemployed, the sampling error for the jobless rate of adult men, for example, is much smaller than is the error for the jobless rate of teenagers. Specifically, the error on monthly change in the jobless rate for men is .25 percentage point; for teenagers, it is 1.29 percentage points.

In the establishment survey, estimates for the 2 most current months are based on incomplete returns; for this reason, these estimates are labeled preliminary in the tables. When all the returns in the sample have been received, the estimates are revised. In other words, data for the month of September are published in preliminary form in October and November and in final form in December. To remove errors that build up over time, a comprehensive count of the employed is conducted each year. The results of this survey are used to establish new benchmarks—comprehensive counts of employment—against which month-to-month changes can be measured. The new benchmarks also incorporate changes in the classification of industries and allow for the formation of new establishments.

Additional statistics and other information

In order to provide a broad view of the Nation's employment situation, BLS regularly publishes a wide variety of data in this news release. More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $8.50 per issue or $25.00 per year from the U.S. Government Printing Office, Washington, D.C., 20204. A check or money order made out to the Superintendent of Documents must accompany all orders.

Employment and Earnings also provides approximations of the standard errors for the household survey data published in this release. For unemployment and other labor force categories, the standard errors appear in tables B through J of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables M, O, P, and Q of that publication.

Table A-1. Employment status of the population, including Armed Forces in the United States, by sex

(Numbers in thousands)

Employment status and sex	Not seasonally adjusted			Seasonally adjusted[1]					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
TOTAL									
Noninstitutional population[1]	186,666	188,286	188,428	186,666	187,854	187,995	188,149	188,286	188,428
Labor force	123,546	127,132	125,530	123,688	125,283	125,766	125,622	125,706	125,742
Participation rate[3]	66.2	67.5	66.6	66.3	66.7	66.9	66.8	66.8	66.7
Total employed[2]	117,178	120,780	119,200	117,074	118,888	119,207	119,125	119,285	119,158
Employment-population ratio[4]	62.8	64.1	63.3	62.7	63.3	63.4	63.3	63.4	63.2
Resident Armed Forces	1,704	1,688	1,702	1,704	1,673	1,666	1,666	1,688	1,702
Civilian employed	115,474	119,092	117,498	115,370	117,215	117,541	117,459	117,597	117,456
Agriculture	3,250	3,633	3,329	3,176	3,112	3,096	3,219	3,307	3,257
Nonagricultural industries	112,225	115,460	114,169	112,194	114,102	114,445	114,240	114,290	114,199
Unemployed	6,368	6,352	6,330	6,614	6,395	6,561	6,497	6,421	6,584
Unemployment rate[5]	5.2	5.0	5.0	5.3	5.1	5.2	5.2	5.1	5.2
Not in labor force	63,119	61,155	62,899	62,978	62,571	62,228	62,527	62,580	62,686
Men, 16 years and over									
Noninstitutional population[1]	89,577	90,384	90,456	89,577	90,167	90,237	90,315	90,384	90,456
Labor force[2]	68,465	70,587	69,123	68,604	69,114	69,507	69,245	69,337	69,272
Participation rate	76.4	78.1	76.4	76.6	76.7	77.0	76.7	76.7	76.6
Total employed[2]	65,282	67,431	65,875	65,015	65,713	66,110	65,961	65,934	65,601
Employment-population ratio[4]	72.9	74.6	72.8	72.6	72.9	73.3	73.0	72.9	72.5
Resident Armed Forces	1,540	1,519	1,531	1,540	1,511	1,501	1,499	1,519	1,531
Civilian employed	63,742	65,912	64,344	63,475	64,202	64,609	64,462	64,415	64,070
Unemployed	3,183	3,157	3,248	3,589	3,401	3,397	3,284	3,403	3,672
Unemployment rate[5]	4.6	4.5	4.7	5.2	4.9	4.9	4.7	4.9	5.3
Women, 16 years and over									
Noninstitutional population[1]	97,089	97,902	97,972	97,089	97,687	97,758	97,834	97,902	97,972
Labor force[2]	55,082	56,544	56,407	55,084	56,169	56,261	56,377	56,370	56,470
Participation rate	56.7	57.8	57.6	56.7	57.5	57.6	57.6	57.6	57.6
Total employed[2]	51,896	53,349	53,325	52,059	53,175	53,097	53,164	53,352	53,557
Employment-population ratio[4]	53.5	54.5	54.4	53.6	54.4	54.3	54.3	54.5	54.7
Resident Armed Forces	164	169	171	164	162	165	167	169	171
Civilian employed	51,732	53,180	53,154	51,895	53,013	52,932	52,997	53,183	53,386
Unemployed	3,186	3,195	3,081	3,025	2,994	3,164	3,213	3,018	2,912
Unemployment rate[5]	5.8	5.7	5.5	5.5	5.3	5.6	5.7	5.4	5.2

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[1] The population and Armed Forces figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes members of the Armed Forces stationed in the United States.

[3] Labor force as a percent of the noninstitutional population.

[4] Total employment as a percent of the noninstitutional population.

[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

Table A-2. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
TOTAL									
Civilian noninstitutional population	184,962	186,596	186,726	184,962	186,181	186,329	186,483	186,596	186,726
Civilian labor force	121,842	125,444	123,828	121,984	123,610	124,102	123,956	124,018	124,040
Participation rate	65.9	67.2	66.3	66.0	66.4	66.6	66.5	66.5	66.4
Employed	115,474	119,092	117,498	115,370	117,215	117,541	117,459	117,597	117,456
Employment-population ratio[2]	62.4	63.8	62.9	62.4	63.0	63.1	63.0	63.0	62.9
Unemployed	6,368	6,352	6,330	6,614	6,395	6,561	6,497	6,421	6,584
Unemployment rate	5.2	5.1	5.1	5.4	5.2	5.3	5.2	5.2	5.3
Men, 20 years and over									
Civilian noninstitutional population	80,751	81,754	81,790	80,751	81,524	81,592	81,679	81,754	81,790
Civilian labor force	62,942	64,167	63,771	62,884	63,503	63,831	63,656	63,643	63,721
Participation rate	77.9	78.5	78.0	77.9	77.9	78.2	77.9	77.8	77.9
Employed	60,402	61,603	61,113	59,979	60,798	61,093	60,921	60,853	60,683
Employment-population ratio[2]	74.8	75.4	74.7	74.3	74.6	74.9	74.6	74.4	74.2
Agriculture	2,325	2,529	2,419	2,249	2,284	2,256	2,342	2,364	2,339
Nonagricultural industries	58,077	59,074	58,694	57,730	58,514	58,837	58,579	58,489	58,344
Unemployed	2,540	2,564	2,658	2,905	2,705	2,737	2,734	2,790	3,038
Unemployment rate	4.0	4.0	4.2	4.6	4.3	4.3	4.3	4.4	4.8
Women, 20 years and over									
Civilian noninstitutional population	89,735	90,684	90,771	89,735	90,432	90,526	90,607	90,684	90,771
Civilian labor force	51,172	52,000	52,558	50,991	52,171	52,231	52,463	52,373	52,443
Participation rate	57.0	57.3	57.9	56.8	57.7	57.7	57.9	57.8	57.8
Employed	48,556	49,352	50,040	48,535	49,690	49,661	49,850	49,905	50,089
Employment-population ratio[2]	54.1	54.4	55.1	54.1	54.9	54.9	55.0	55.0	55.2
Agriculture	642	682	701	638	628	610	627	644	701
Nonagricultural industries	47,914	48,670	49,339	47,897	49,062	49,051	49,223	49,261	49,388
Unemployed	2,616	2,648	2,518	2,456	2,480	2,570	2,613	2,468	2,353
Unemployment rate	5.1	5.1	4.8	4.8	4.8	4.9	5.0	4.7	4.5
Both sexes, 16 to 19 years									
Civilian noninstitutional population	14,477	14,160	14,166	14,477	14,224	14,211	14,196	14,160	14,166
Civilian labor force	7,728	9,276	7,498	8,109	7,936	8,040	7,837	8,003	7,876
Participation rate	53.4	65.5	52.9	56.0	55.8	56.6	55.2	56.5	55.6
Employed	6,516	8,137	6,345	6,856	6,726	6,786	6,687	6,840	6,683
Employment-population ratio[2]	45.0	57.5	44.8	47.4	47.3	47.8	47.1	48.3	47.2
Agriculture	282	422	209	289	200	230	249	300	216
Nonagricultural industries	6,234	7,715	6,136	6,567	6,526	6,556	6,438	6,540	6,467
Unemployed	1,212	1,140	1,153	1,253	1,210	1,254	1,150	1,163	1,193
Unemployment rate	15.7	12.3	15.4	15.5	15.2	15.6	14.7	14.5	15.1

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
WHITE									
Civilian noninstitutional population	158,422	159,470	159,549	158,422	159,200	159,297	159,400	159,470	159,549
Civilian labor force	104,959	107,597	106,195	105,036	106,164	106,455	106,424	106,446	106,325
Participation rate	66.3	67.5	66.6	66.3	66.7	66.8	66.8	66.8	66.6
Employed	100,177	102,938	101,600	100,058	101,465	101,693	101,581	101,670	101,535
Employment-population ratio	63.2	64.6	63.7	63.2	63.7	63.8	63.7	63.8	63.6
Unemployed	4,782	4,659	4,595	4,978	4,699	4,762	4,843	4,777	4,791
Unemployment rate	4.6	4.3	4.3	4.7	4.4	4.5	4.6	4.5	4.5
Men, 20 years and over									
Civilian labor force	54,872	55,766	55,433	54,839	55,249	55,557	55,437	55,377	55,413
Participation rate	78.4	78.8	78.3	78.3	78.3	78.7	78.4	78.3	78.3
Employed	52,910	53,868	53,416	52,579	53,248	53,500	53,343	53,282	53,097
Employment-population ratio	75.6	76.2	75.5	75.1	75.5	75.8	75.5	75.3	75.0
Unemployed	1,962	1,898	2,017	2,260	2,001	2,057	2,094	2,095	2,316
Unemployment rate	3.6	3.4	3.6	4.1	3.6	3.7	3.8	3.8	4.2
Women, 20 years and over									
Civilian labor force	43,397	43,886	44,358	43,191	44,084	44,050	44,302	44,169	44,192
Participation rate	56.7	56.8	57.4	56.4	57.2	57.1	57.4	57.2	57.2
Employed	41,495	41,948	42,570	41,413	42,282	42,236	42,411	42,372	42,527
Employment-population ratio	54.2	54.3	55.1	54.1	54.9	54.8	55.0	54.9	55.0
Unemployed	1,902	1,938	1,788	1,778	1,803	1,814	1,891	1,798	1,665
Unemployment rate	4.4	4.4	4.0	4.1	4.1	4.1	4.3	4.1	3.8
Both sexes, 16 to 19 years									
Civilian labor force	6,690	7,945	6,405	7,006	6,831	6,848	6,685	6,900	6,720
Participation rate	56.7	69.1	55.9	59.4	59.0	59.2	57.9	60.0	58.6
Employed	5,772	7,122	5,614	6,066	5,936	5,957	5,827	6,016	5,910
Employment-population ratio	48.9	61.9	49.0	51.4	51.3	51.5	50.5	52.3	51.0
Unemployed	918	823	790	940	895	891	858	884	810
Unemployment rate	13.7	10.4	12.3	13.4	13.1	13.0	12.8	12.8	12.1
Men	14.2	10.3	12.9	14.5	14.8	13.4	12.4	12.9	13.3
Women	13.2	10.4	11.7	12.3	11.2	12.6	13.4	12.7	10.8
BLACK									
Civilian noninstitutional population	20,762	21,060	21,085	20,762	20,986	21,012	21,038	21,060	21,085
Civilian labor force	13,178	13,694	13,481	13,201	13,444	13,600	13,555	13,448	13,515
Participation rate	63.5	65.0	63.9	63.6	64.1	64.7	64.4	63.9	64.1
Employed	11,764	12,197	11,956	11,758	11,968	11,982	12,082	11,958	11,940
Employment-population ratio	56.7	57.9	56.7	56.6	57.0	57.0	57.4	56.8	56.6
Unemployed	1,414	1,497	1,524	1,443	1,476	1,618	1,473	1,490	1,574
Unemployment rate	10.7	10.9	11.3	10.9	11.0	11.9	10.9	11.1	11.6
Men, 20 years and over									
Civilian labor force	6,126	6,263	6,246	6,117	6,207	6,200	6,205	6,189	6,247
Participation rate	74.3	74.7	74.6	74.2	74.3	74.1	74.1	73.8	74.7
Employed	5,620	5,686	5,682	5,563	5,622	5,619	5,629	5,580	5,620
Employment-population ratio	68.1	67.8	67.9	67.5	67.3	67.2	67.2	66.6	67.2
Unemployed	506	578	564	554	586	581	576	609	627
Unemployment rate	8.3	9.2	9.0	9.1	9.4	9.4	9.3	9.8	10.0
Women, 20 years and over									
Civilian labor force	6,192	6,338	6,369	6,174	6,340	6,405	6,394	6,359	6,356
Participation rate	59.9	60.3	60.6	59.8	60.6	61.2	61.0	60.5	60.4
Employed	5,558	5,710	5,731	5,575	5,740	5,732	5,759	5,762	5,748
Employment-population ratio	53.8	54.4	54.5	54.0	54.9	54.7	54.9	54.9	54.6
Unemployed	633	628	639	599	600	674	635	597	607
Unemployment rate	10.2	9.9	10.0	9.7	9.5	10.5	9.9	9.4	9.6
Both sexes, 16 to 19 years									
Civilian labor force	861	1,092	865	910	897	994	956	900	912
Participation rate	39.5	50.3	39.4	41.7	41.3	45.7	44.0	41.4	41.5
Employed	585	801	544	620	606	631	694	616	572
Employment-population ratio	26.8	36.9	24.7	28.4	27.9	29.0	31.9	28.3	26.0
Unemployed	275	291	322	290	291	363	262	284	340
Unemployment rate	32.0	26.6	37.2	31.9	32.4	36.5	27.4	31.6	37.3
Men	32.5	24.6	34.4	31.9	36.9	33.5	22.1	30.0	34.1
Women	31.5	28.9	39.6	31.9	28.4	40.2	33.1	33.4	40.3

See footnotes at end of table

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin—Continued

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
HISPANIC ORIGIN									
Civilian noninstitutional population[1]	13,419	13,853	13,894	13,419	13,731	13,772	13,813	13,853	13,894
Civilian labor force	9,086	9,494	9,332	9,061	9,426	9,272	9,433	9,364	9,326
Participation rate	67.7	68.5	67.2	67.5	68.7	67.3	68.3	67.6	67.1
Employed	8,444	8,666	8,610	8,378	8,686	8,524	8,587	8,521	8,550
Employment-population ratio[2]	62.9	62.6	62.0	62.4	63.3	61.9	62.2	61.5	61.5
Unemployed	642	828	722	683	742	748	846	843	776
Unemployment rate	7.1	8.7	7.7	7.5	7.9	8.1	9.0	9.0	8.3

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
CHARACTERISTIC									
Civilian employed, 16 years and over	115,474	119,092	117,496	115,370	117,215	117,541	117,459	117,597	117,456
Married men, spouse present	40,815	40,880	40,856	40,513	40,902	41,102	41,089	40,836	40,572
Married women, spouse present	29,031	28,365	29,608	28,836	29,739	29,481	29,552	29,220	29,461
Women who maintain families	6,188	6,298	6,379	6,253	6,331	6,403	6,456	6,342	6,437
MAJOR INDUSTRY AND CLASS OF WORKER									
Agriculture:									
Wage and salary workers	1,626	1,968	1,886	1,612	1,610	1,550	1,695	1,603	1,671
Self-employed workers	1,500	1,484	1,523	1,421	1,358	1,412	1,434	1,420	1,441
Unpaid family workers	123	181	120	137	127	126	126	137	135
Nonagricultural industries:									
Wage and salary workers	103,400	106,390	105,287	103,501	105,245	105,519	105,321	105,259	105,355
Government	17,035	16,887	17,513	17,145	17,230	17,261	17,518	17,591	17,619
Private industries	86,365	89,503	87,775	86,356	88,015	88,258	87,803	87,668	87,737
Private households	1,077	1,217	1,011	1,119	1,128	1,140	1,093	1,146	1,054
Other industries	85,288	88,286	86,764	85,237	86,887	87,118	86,710	86,522	86,682
Self-employed workers	8,582	8,787	8,586	8,570	8,516	8,570	8,606	8,625	8,569
Unpaid family workers	232	273	298	230	322	241	239	264	298
PERSONS AT WORK PART TIME									
All industries:									
Part time for economic reasons	4,704	5,125	4,487	5,087	4,637	4,957	4,750	4,786	4,882
Slack work	2,041	2,250	2,097	2,288	2,298	2,318	2,311	2,282	2,330
Could only find part-time work	2,191	2,415	1,891	2,389	2,343	2,289	2,138	2,107	2,171
Voluntary part time	15,375	12,480	15,686	15,270	15,316	15,416	15,652	15,614	15,542
Nonagricultural industries:									
Part time for economic reasons	4,458	4,849	4,229	4,862	4,609	4,801	4,505	4,553	4,612
Slack work	1,885	2,084	1,936	2,102	2,102	2,190	2,185	2,129	2,174
Could only find part-time work	2,113	2,309	1,910	2,317	2,301	2,236	2,057	2,024	2,090
Voluntary part time	14,906	11,985	15,215	14,819	14,976	14,877	15,219	15,094	15,109

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial dispute.

Table A-5. Range of unemployment measures based on varying definitions of unemployment and the labor force, seasonally adjusted

(Percent)

Measure	Quarterly averages					Monthly data		
	1988		1989			1989		
	III	IV	I	II	III	July	Aug.	Sept.
U-1 Persons unemployed 15 weeks or longer as a percent of the civilian labor force	1.3	1.2	1.1	1.1	1.1	1.2	1.1	1.1
U-2 Job losers as a percent of the civilian labor force	2.5	2.5	2.4	2.3	2.4	2.4	2.4	2.4
U-3 Unemployed persons 25 years and over as a percent of the civilian labor force for persons 25 years and over	4.2	4.1	4.0	4.0	4.0	4.0	4.0	4.1
U-4 Unemployed full-time jobseekers as a percent of the full-time civilian labor force	5.1	5.0	4.9	4.9	4.9	4.9	4.9	5.0
U-5a Total unemployed as a percent of the labor force, including the resident Armed Forces	5.4	5.3	5.1	5.2	5.2	5.2	5.1	5.2
U-5b Total unemployed as a percent of the civilian labor force	5.5	5.3	5.2	5.3	5.2	5.2	5.2	5.3
U-6 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons as a percent of the civilian labor force less 1/2 of the part-time labor force	7.6	7.5	7.2	7.2	7.2	7.2	7.1	7.3
U-7 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons plus discouraged workers as a percent of the civilian labor force plus discouraged workers less 1/2 of the part-time labor force	8.4	8.2	7.9	7.9	7.9	N.A.	N.A.	N.A.

N.A. = not available.

Table A-6. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
CHARACTERISTIC									
Total, 16 years and over	6,614	6,421	6,584	5.4	5.2	5.3	5.2	5.2	5.3
Men, 16 years and over	3,589	3,403	3,672	5.4	5.0	5.0	4.8	5.0	5.4
Men, 20 years and over	2,905	2,790	3,038	4.6	4.3	4.3	4.3	4.4	4.8
Women, 16 years and over	3,025	3,018	2,912	5.5	5.3	5.6	5.7	5.4	5.2
Women, 20 years and over	2,456	2,468	2,353	4.8	4.8	4.9	5.0	4.7	4.5
Both sexes, 16 to 19 years	1,253	1,163	1,193	15.5	15.2	15.6	14.7	14.5	15.1
Married men, spouse present	1,318	1,312	1,424	3.1	2.9	2.8	2.9	3.1	3.4
Married women, spouse present	1,133	1,189	1,154	3.8	3.8	3.8	3.8	3.9	3.8
Women who maintain families	548	552	529	8.1	8.3	7.9	8.7	8.0	7.6
Full-time workers	5,293	5,183	5,255	5.1	4.8	4.8	4.9	4.9	5.0
Part-time workers	1,328	1,253	1,330	7.4	6.9	7.7	7.2	6.9	7.3
Labor force time lost[2]	--	--	--	6.3	5.9	6.1	6.0	5.9	5.9
INDUSTRY									
Nonagricultural private wage and salary workers	4,969	4,971	5,021	5.4	5.2	5.3	5.4	5.4	5.4
Goods-producing industries	1,871	1,844	1,825	6.4	5.8	6.2	6.2	6.4	6.3
Mining	67	48	61	8.6	4.5	3.7	5.5	6.5	8.5
Construction	608	638	648	9.6	9.3	10.0	10.5	10.3	10.4
Manufacturing	1,196	1,158	1,116	5.4	4.9	5.2	5.0	5.2	5.1
Durable goods	677	623	613	5.2	4.5	4.6	4.7	4.8	4.7
Nondurable goods	519	535	503	5.8	5.5	6.1	5.5	5.9	5.5
Service-producing industries	3,098	3,127	3,196	5.0	4.9	4.9	5.0	4.9	5.0
Transportation and public utilities	237	234	298	3.8	4.0	4.4	4.2	3.6	4.7
Wholesale and retail trade	1,438	1,424	1,374	6.2	5.5	6.0	6.2	6.0	5.8
Finance and service industries	1,423	1,470	1,524	4.4	4.7	4.3	4.4	4.4	4.5
Government workers	474	489	505	2.7	2.9	3.0	2.8	2.7	2.8
Agricultural wage and salary workers	195	169	140	10.8	10.3	11.0	8.5	8.6	7.7

[1] Unemployment as a percent of the civilian labor force.

[2] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

Table A-7. Duration of unemployment

(Numbers in thousands)

Weeks of unemployment	Not seasonally adjusted			Seasonally adjusted					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
DURATION									
Less than 5 weeks	3,308	3,022	3,355	3,116	3,041	3,309	3,149	3,071	3,156
5 to 14 weeks	1,632	2,152	1,737	1,896	2,017	1,999	1,927	2,011	2,036
15 weeks and over	1,428	1,178	1,237	1,568	1,313	1,258	1,472	1,305	1,370
15 to 26 weeks	644	612	664	775	702	659	846	737	789
27 weeks and over	784	566	573	793	611	599	626	567	581
Average (mean) duration, in weeks	13.3	11.3	11.3	13.5	11.8	11.1	12.0	11.3	11.4
Median duration, in weeks	4.8	5.0	4.2	5.7	5.3	5.5	5.6	5.0	5.0
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	51.9	47.6	53.0	47.4	47.7	50.4	48.1	48.1	48.1
5 to 14 weeks	25.6	33.9	27.4	26.8	31.7	30.4	29.4	31.5	31.0
15 weeks and over	22.4	18.5	19.5	23.8	20.6	19.2	22.5	20.4	20.9
15 to 26 weeks	10.1	9.6	10.5	11.8	11.0	10.0	12.9	11.5	12.0
27 weeks and over	12.3	8.9	9.1	12.1	9.6	9.1	9.6	8.9	8.8

Table A-8. Reason for unemployment

(Numbers in thousands)

Reasons	Not seasonally adjusted			Seasonally adjusted					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
NUMBER OF UNEMPLOYED									
Job losers	2,732	2,766	2,586	3,079	2,724	2,765	2,920	2,984	2,915
On layoff	636	736	631	833	790	806	822	873	828
Other job losers	2,096	2,030	1,955	2,246	1,934	1,958	2,097	2,111	2,087
Job leavers	1,099	1,122	1,162	985	1,114	1,023	1,010	1,040	1,039
Reentrants	1,821	1,814	1,997	1,767	1,852	2,051	1,934	1,768	1,946
New entrants	717	650	585	761	683	742	724	628	629
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	42.9	43.5	40.9	46.7	42.7	42.0	44.3	46.5	44.6
On layoff	10.0	11.6	10.0	12.6	12.4	12.3	12.5	13.6	12.7
Other job losers	32.9	32.0	30.9	34.1	30.3	29.8	31.8	32.9	32.0
Job leavers	17.3	17.7	18.4	14.9	17.5	15.5	15.3	16.2	15.9
Reentrants	28.6	28.6	31.5	26.8	29.1	31.2	29.4	27.5	29.8
New entrants	11.3	10.2	9.2	11.5	10.7	11.3	11.0	9.8	9.6
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers	2.2	2.2	2.1	2.5	2.2	2.2	2.4	2.4	2.4
Job leavers	.9	.9	.9	.8	.9	.8	.8	.8	.8
Reentrants	1.5	1.4	1.6	1.4	1.5	1.7	1.6	1.4	1.6
New entrants	.6	.5	.5	.6	.6	.6	.6	.5	.5

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Sex and age	Number of unemployed persons (in thousands)			Unemployment rates					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
Total, 16 years and over	6,614	6,421	6,584	5.4	5.2	5.3	5.2	5.2	5.3
16 to 24 years	2,457	2,420	2,444	10.9	10.4	11.3	10.7	10.9	11.2
16 to 19 years	1,253	1,163	1,193	15.5	15.2	15.6	14.7	14.5	15.1
16 to 17 years	650	565	518	19.6	16.2	17.5	17.8	18.1	16.8
18 to 19 years	615	609	683	12.8	14.5	14.9	12.4	12.5	14.2
20 to 24 years	1,204	1,257	1,251	8.4	7.7	8.9	8.6	8.8	8.9
25 years and over	4,179	4,031	4,182	4.2	4.0	4.0	4.0	4.0	4.1
25 to 54 years	3,733	3,556	3,698	4.4	4.2	4.1	4.2	4.1	4.3
55 years and over	436	[illegible]	461	2.9	2.9	3.3	3.1	3.1	3.0
Men, 16 years and over	3,589	3,403	3,672	5.4	5.0	5.0	4.8	5.0	5.4
16 to 24 years	1,329	1,328	1,380	11.3	11.0	11.5	10.4	11.4	12.1
16 to 19 years	684	613	634	16.4	17.0	15.8	13.4	14.7	15.8
16 to 17 years	367	290	311	20.8	18.8	20.0	17.4	17.4	19.8
18 to 19 years	329	315	334	13.5	15.7	13.6	10.7	12.7	13.5
20 to 24 years	645	715	746	8.5	7.7	9.2	8.7	9.6	10.1
25 years and over	2,270	2,106	2,324	4.1	3.7	3.7	3.7	3.7	4.1
25 to 54 years	2,014	1,800	1,992	4.3	3.9	3.7	3.9	3.8	4.2
55 years and over	255	291	313	2.9	2.9	3.0	3.1	3.3	3.6
Women, 16 years and over	3,025	3,018	2,912	5.5	5.3	5.6	5.7	5.4	5.2
16 to 24 years	1,128	1,092	1,064	10.5	9.8	11.0	11.1	10.2	10.1
16 to 19 years	569	550	559	14.5	13.4	15.4	16.0	14.4	14.5
16 to 17 years	283	275	207	18.2	13.4	14.7	18.3	18.8	13.7
18 to 19 years	286	294	349	12.0	13.3	16.2	14.4	12.4	14.8
20 to 24 years	559	542	505	8.2	7.7	8.6	8.4	7.9	7.6
25 years and over	1,909	1,925	1,858	4.3	4.4	4.4	4.4	4.2	4.1
25 to 54 years	1,719	1,756	1,705	4.5	4.6	4.5	4.6	4.5	4.3
55 years and over	181	178	147	2.9	3.0	3.8	3.2	2.7	2.2

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[1] Unemployment as a percent of the civilian labor force.

Table A-10. Employment status of black and other workers

(Numbers in thousands)

Employment status	Not seasonally adjusted			Seasonally adjusted					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
Civilian noninstitutional population	26,540	27,128	27,177	26,540	26,981	27,031	27,082	27,128	27,177
Civilian labor force	16,884	17,846	17,632	16,910	17,364	17,607	17,618	17,589	17,680
Participation rate	63.6	65.8	64.9	63.7	64.4	65.1	65.1	64.8	65.1
Employed	15,297	16,154	15,898	15,301	15,707	15,795	15,934	15,910	15,892
Employment-population ratio	57.6	59.5	58.5	57.7	58.2	58.4	58.8	58.6	58.5
Unemployed	1,586	1,692	1,735	1,609	1,657	1,812	1,684	1,680	1,788
Unemployment rate	9.4	9.5	9.8	9.5	9.5	10.3	9.6	9.5	10.1
Not in labor force	9,656	9,282	9,545	9,630	9,617	9,424	9,464	9,539	9,497

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-11. Occupational status of the employed and unemployed, not seasonally adjusted

(Numbers in thousands)

Occupation	Civilian employed		Unemployed		Unemployment rate	
	Sept. 1988	Sept. 1989	Sept. 1988	Sept. 1989	Sept. 1988	Sept. 1989
Total, 16 years and over[1]	115,474	117,496	6,368	6,330	5.2	5.1
Managerial and professional specialty	29,537	30,493	624	715	2.1	2.3
Executive, administrative, and managerial	14,302	14,882	322	405	2.2	2.6
Professional specialty	15,235	15,611	302	310	1.9	1.9
Technical, sales, and administrative support	35,509	35,728	1,573	1,499	4.2	4.0
Technicians and related support	3,676	3,486	92	91	2.5	2.5
Sales occupations	13,575	13,939	658	617	4.6	4.2
Administrative support, including clerical	18,259	18,302	822	791	4.3	4.1
Service occupations	15,223	15,626	1,056	1,089	6.5	6.5
Private household	851	778	53	37	5.9	4.5
Protective service	1,971	1,983	66	101	3.3	4.9
Service, except private household and protective	12,400	12,864	936	951	7.0	6.9
Precision production, craft, and repair	13,514	13,838	603	665	4.3	4.6
Mechanics and repairers	4,281	4,507	140	166	3.2	3.6
Construction trades	5,145	5,247	288	328	5.3	5.9
Other precision production, craft, and repair	4,088	4,084	175	170	4.1	4.0
Operators, fabricators, and laborers	18,106	18,158	1,513	1,482	7.7	7.5
Machine operators, assemblers, and inspectors	8,156	8,349	715	629	8.1	7.0
Transportation and material moving occupations	5,056	5,129	224	267	4.2	4.9
Handlers, equipment cleaners, helpers, and laborers	4,893	4,681	573	586	10.5	11.1
Construction laborers	899	768	145	148	13.9	16.1
Other handlers, equipment cleaners, helpers, and laborers	3,994	3,912	429	438	9.7	10.1
Farming, forestry, and fishing	3,586	3,656	258	177	6.7	4.6

[1] Persons with no previous work experience and those whose last job was in the Armed Forces are included in the unemployed total.

Table A-12. Employment status of male Vietnam-era veterans and nonveterans by age, not seasonally adjusted

(Numbers in thousands)

Veteran status and age	Civilian noninstitutional population		Civilian labor force							
			Total		Employed		Unemployed			
							Number		Percent of labor force	
	Sept. 1988	Sept. 1989	Sept. 1988	Sept. 1989	Sept. 1988	Sept. 1989	Sept. 1988	Sept. 1989	Sept. 1988	Sept. 1989
VIETNAM-ERA VETERANS										
Total, 30 years and over	7,890	7,928	7,261	7,249	7,008	6,999	253	251	3.5	3.5
30 to 44 years	5,826	5,409	5,540	5,114	5,344	4,926	196	187	3.5	3.7
30 to 34 years	633	440	592	406	554	382	38	24	6.4	6.0
35 to 39 years	2,070	1,673	1,965	1,561	1,894	1,486	71	75	3.6	4.8
40 to 44 years	3,123	3,296	2,983	3,146	2,896	3,058	87	88	2.9	2.8
45 years and over	2,064	2,519	1,721	2,136	1,664	2,072	57	63	3.3	3.0
NONVETERANS										
Total, 30 to 44 years	20,631	21,665	19,645	20,572	18,958	19,877	687	695	3.5	3.4
30 to 34 years	9,175	9,401	8,779	8,966	8,439	8,669	340	297	3.9	3.3
35 to 39 years	6,928	7,506	6,593	7,121	6,405	6,867	188	255	2.9	3.6
40 to 44 years	4,528	4,758	4,273	4,485	4,114	4,341	159	143	3.7	3.2

NOTE: Male Vietnam-era veterans are men who served in the Armed Forces between August 5, 1964 and May 7, 1975. Nonveterans are men who have never served in the Armed Forces; published data are limited to those 30 to 44 years of age, the group that most closely corresponds to the bulk of the Vietnam-era veteran population.

Table A-13. Employment status of the civilian population for eleven large States

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[1]					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May. 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
California									
Civilian noninstitutional population	20,903	21,192	21,227	20,903	21,085	21,122	21,147	21,192	21,227
Civilian labor force	13,999	14,455	14,409	14,053	14,331	14,286	14,443	14,358	14,452
Employed	13,298	13,782	13,695	13,330	13,546	13,489	13,674	13,706	13,716
Unemployed	701	674	715	723	785	797	769	652	736
Unemployment rate	5.0	4.7	5.0	5.1	5.5	5.6	5.3	4.5	5.1
Florida									
Civilian noninstitutional population	9,755	9,978	9,996	9,755	9,924	9,942	9,965	9,978	9,996
Civilian labor force	6,135	6,310	6,198	6,133	6,227	6,344	6,286	6,209	6,194
Employed	5,824	5,968	5,843	5,831	5,827	5,960	5,930	5,884	5,846
Unemployed	310	342	355	302	400	384	356	325	348
Unemployment rate	5.1	5.4	5.7	4.9	6.4	6.1	5.7	5.2	5.6
Illinois									
Civilian noninstitutional population	8,720	8,708	8,711	8,720	8,698	8,701	8,699	8,708	8,711
Civilian labor force	5,772	5,985	5,974	5,745	5,899	5,934	5,860	5,889	5,944
Employed	5,462	5,637	5,644	5,395	5,563	5,609	5,533	5,540	5,576
Unemployed	310	347	330	350	336	325	327	349	368
Unemployment rate	5.4	5.8	5.5	6.1	5.7	5.5	5.6	5.9	6.2
Massachusetts									
Civilian noninstitutional population	4,598	4,604	4,605	4,598	4,598	4,600	4,601	4,604	4,605
Civilian labor force	3,125	3,243	3,112	3,139	3,196	3,166	3,183	3,191	3,130
Employed	3,031	3,117	2,978	3,043	3,080	3,040	3,041	3,060	2,993
Unemployed	94	126	134	96	116	126	142	131	137
Unemployment rate	3.0	3.9	4.3	3.1	3.6	4.0	4.5	4.1	4.4
Michigan									
Civilian noninstitutional population	7,043	7,100	7,101	7,043	7,095	7,097	7,104	7,100	7,101
Civilian labor force	4,611	4,766	4,689	4,611	4,581	4,630	4,646	4,673	4,682
Employed	4,305	4,449	4,339	4,274	4,273	4,291	4,331	4,352	4,305
Unemployed	306	317	349	337	308	339	315	321	377
Unemployment rate	6.6	6.7	7.5	7.3	6.7	7.3	6.8	6.9	8.1
New Jersey									
Civilian noninstitutional population	6,044	6,066	6,068	6,044	6,059	6,062	6,064	6,066	6,068
Civilian labor force	3,941	4,035	3,974	3,973	3,952	3,971	3,976	3,990	4,014
Employed	3,807	3,864	3,803	3,823	3,834	3,806	3,814	3,810	3,828
Unemployed	134	171	171	150	118	165	162	180	186
Unemployment rate	3.4	4.2	4.3	3.8	3.0	4.2	4.1	4.5	4.6
New York									
Civilian noninstitutional population	13,804	13,816	13,817	13,804	13,809	13,812	13,814	13,816	13,817
Civilian labor force	8,513	8,734	8,595	8,554	8,770	8,705	8,674	8,557	8,649
Employed	8,159	8,313	8,147	8,184	8,307	8,266	8,269	8,127	8,182
Unemployed	354	421	448	370	463	439	405	430	467
Unemployment rate	4.2	4.8	5.2	4.3	5.3	5.0	4.7	5.0	5.4
North Carolina									
Civilian noninstitutional population	4,934	5,016	5,021	4,934	5,000	5,006	5,014	5,016	5,021
Civilian labor force	3,352	3,484	3,445	3,358	3,467	3,463	3,444	3,432	3,454
Employed	3,248	3,363	3,324	3,237	3,340	3,339	3,327	3,304	3,315
Unemployed	104	121	121	121	127	124	117	128	139
Unemployment rate	3.1	3.5	3.5	3.6	3.7	3.6	3.4	3.7	4.0
Ohio									
Civilian noninstitutional population	8,263	8,318	8,320	8,263	8,310	8,313	8,320	8,318	8,320
Civilian labor force	5,287	5,517	5,460	5,311	5,434	5,490	5,450	5,469	5,491
Employed	4,985	5,257	5,192	5,004	5,138	5,183	5,157	5,209	5,216
Unemployed	302	261	269	307	296	307	293	260	275
Unemployment rate	5.7	4.7	4.9	5.8	5.4	5.6	5.4	4.8	5.0

See footnotes at end of table

Table A-13. Employment status of the civilian population for eleven large States—Continued

(Numbers in thousands)

State and employment status	Not seasonally adjusted			Seasonally adjusted					
	Sept. 1988	Aug. 1989	Sept. 1989	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989	Sept. 1989
Pennsylvania									
Civilian noninstitutional population	9,385	9,433	9,435	9,385	9,424	9,427	9,433	9,433	9,435
Civilian labor force	5,881	5,919	5,862	5,827	5,920	5,917	5,823	5,768	5,813
Employed	5,584	5,686	5,625	5,523	5,649	5,678	5,562	5,520	5,572
Unemployed	297	233	237	304	271	239	261	248	241
Unemployment rate	5.1	3.9	4.0	5.2	4.6	4.0	4.5	4.3	4.1
Texas									
Civilian noninstitutional population	12,007	11,996	11,998	12,007	11,987	11,990	11,989	11,996	11,998
Civilian labor force	8,341	8,452	8,266	8,321	8,250	8,223	8,241	8,352	8,253
Employed	7,749	7,843	7,745	7,732	7,762	7,721	7,645	7,729	7,737
Unemployed	591	610	521	589	488	502	596	623	516
Unemployment rate	7.1	7.2	6.3	7.1	5.9	6.1	7.2	7.5	6.3

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[1] These are the official Bureau of Labor Statistics' estimates used in the administration of Federal fund allocation programs.

[2] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and the seasonally adjusted columns.

Table A-14. Persons not in the labor force by reason, sex, and race, quarterly averages

(In thousands)

Reason, sex, and race	Not seasonally adjusted		Seasonally adjusted				
	1988	1989	1988		1989		
	III	III	III	IV	I	II	III
TOTAL							
Total not in labor force	61,796	61,447	62,959	62,866	62,482	62,388	62,597
Do not want a job now	56,816	56,153	58,202	57,481	57,310	57,046	57,853
Current activity: Going to school	3,774	3,856	7,022	6,229	6,365	6,292	7,312
Ill, disabled	4,447	4,684	4,453	4,730	4,528	4,762	4,859
Keeping house	25,380	24,026	25,331	24,605	24,550	24,082	23,988
Retired	17,044	18,026	16,825	17,251	17,179	17,407	17,488
Other activity	6,171	5,560	4,571	4,666	4,688	4,503	4,206
Want a job now	4,982	5,294	5,276	5,418	5,313	5,331	5,509
Reason not looking: School attendance	808	912	1,387	1,412	1,279	1,274	1,477
Ill health, disability	791	915	794	750	910	966	890
Home responsibilities	1,237	1,307	1,128	1,145	1,177	1,151	1,169
Think cannot get a job	952	835	941	951	855	869	815
Job-market factors	600	513	599	587	562	519	511
Personal factors	351	322	341	364	293	350	305
Other reasons[1]	1,194	1,325	1,026	1,160	1,093	1,072	1,159
Men							
Total not in labor force	20,000	20,135	20,926	21,084	20,961	20,839	21,101
Do not want a job now	18,311	18,322	19,100	19,062	19,066	18,929	19,264
Want a job now	1,690	1,813	1,920	1,986	1,946	1,932	2,031
Reason not looking: School attendance	379	440	669	716	632	639	736
Ill health, disability	376	503	379	351	420	471	487
Think cannot get a job	448	351	447	446	410	410	340
Other reasons[1]	487	519	425	473	484	412	470
Women							
Total not in labor force	41,796	41,311	42,035	41,781	41,521	41,549	41,496
Do not want a job now	38,505	37,831	39,103	38,429	38,225	38,118	38,589
Want a job now	3,293	3,481	3,356	3,433	3,367	3,399	3,478
Reason not looking: School attendance	429	472	718	697	646	636	742
Ill health, disability	415	412	415	399	490	494	403
Home responsibilities	1,237	1,307	1,128	1,145	1,177	1,151	1,169
Think cannot get a job	504	484	494	506	445	460	475
Other reasons	708	806	601	686	609	660	689
White							
Total not in labor force	52,518	52,175	53,447	53,325	52,960	52,866	53,074
Do not want a job now	48,975	48,513	49,729	49,381	49,290	49,060	49,320
Want a job now	3,545	3,658	3,691	3,884	3,844	3,835	3,774
Reason not looking: School attendance	517	607	908	911	895	906	1,003
Ill health, disability	562	597	556	511	704	684	583
Home responsibilities	902	898	806	858	793	835	793
Think cannot get a job	583	509	600	676	570	527	514
Other reasons[1]	981	1,046	821	929	882	882	881
Black							
Total not in labor force	7,284	7,347	7,497	7,471	7,446	7,542	7,566
Do not want a job now	6,134	5,875	6,227	6,182	6,134	6,303	5,971
Want a job now	1,150	1,472	1,241	1,259	1,315	1,325	1,613
Reason not looking: School attendance	197	264	316	374	335	316	430
Ill health, disability	222	310	217	206	208	261	297
Home responsibilities	265	362	270	272	343	266	365
Think cannot get a job	317	296	290	210	253	323	272
Other reasons[1]	149	239	147	197	178	160	250

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[1] Includes small number of men not looking for work because of "home responsibilities."

NOTE: Detail may not add to not-in-labor force totals because of the weighting procedures.

Table B-1. Employees on nonagricultural payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	Sept. 1988	July 1989	Aug. 1989p/	Sept. 1989p/	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989p/	Sept. 1989p/
Total	106,601	108,540	108,638	109,453	106,207	108,310	108,607	108,767	108,855	109,064
Total private	89,416	91,735	91,967	91,874	88,736	90,623	90,884	91,016	91,075	91,189
Goods-producing industries	25,757	25,904	26,142	26,041	25,313	25,672	25,648	25,669	25,696	25,588
Mining	728	714	740	734	719	722	715	706	730	725
Oil and gas extraction	406.5	406.4	409.3	405.7	404	401	402	404	405	403
Construction	5,442	5,622	5,672	5,598	5,163	5,283	5,283	5,314	5,316	5,316
General building contractors	1,426.3	1,463.8	1,479.1	1,451.6	1,374	1,388	1,384	1,391	1,401	1,398
Manufacturing	19,587	19,568	19,730	19,709	19,431	19,667	19,650	19,649	19,650	19,547
Production workers	13,413	13,296	13,458	13,461	13,263	13,426	13,406	13,410	13,406	13,309
Durable goods	11,524	11,490	11,538	11,535	11,464	11,594	11,567	11,549	11,553	11,471
Production workers	7,712	7,618	7,670	7,682	7,653	7,735	7,706	7,697	7,700	7,624
Lumber and wood products	783.0	786.5	787.4	781.0	763	771	769	767	764	760
Furniture and fixtures	531.5	523.6	527.5	529.7	530	534	534	536	529	528
Stone, clay, and glass products	611.6	612.5	613.2	607.4	600	604	603	602	601	595
Primary metal industries	781.1	776.0	783.6	779.9	779	787	787	785	787	777
Blast furnaces and basic steel products	276.7	277.5	276.1	274.4	277	276	276	277	276	274
Fabricated metal products	1,443.9	1,430.3	1,435.2	1,442.9	1,436	1,452	1,449	1,446	1,441	1,434
Machinery, except electrical	2,094.6	2,145.1	2,142.5	2,147.3	2,098	2,150	2,151	2,154	2,153	2,149
Electrical and electronic equipment	2,077.8	2,027.6	2,032.4	2,026.2	2,072	2,050	2,041	2,040	2,032	2,020
Transportation equipment	2,053.1	2,023.3	2,035.1	2,041.8	2,044	2,076	2,062	2,046	2,070	2,034
Motor vehicles and equipment	865.5	828.5	846.7	847.1	859	876	861	844	873	840
Instruments and related products	755.0	781.4	783.6	781.2	756	778	779	781	782	782
Miscellaneous manufacturing	391.9	363.4	397.0	397.5	386	392	392	392	394	392
Nondurable goods	8,063	8,078	8,192	8,174	7,967	8,073	8,083	8,100	8,097	8,076
Production workers	5,701	5,678	5,788	5,779	5,610	5,691	5,694	5,713	5,706	5,685
Food and kindred products	1,797.8	1,711.2	1,755.5	1,756.8	1,627	1,656	1,663	1,678	1,670	1,673
Tobacco manufactures	58.1	49.5	52.2	54.6	55	53	52	53	52	52
Textile mill products	730.0	717.3	730.9	730.3	726	728	729	730	729	726
Apparel and other textile products	1,090.8	1,061.3	1,093.2	1,088.0	1,085	1,095	1,093	1,094	1,094	1,083
Paper and allied products	694.5	702.6	704.1	699.4	693	697	697	701	701	697
Printing and publishing	1,566.7	1,605.4	1,606.4	1,604.4	1,573	1,603	1,607	1,609	1,611	1,611
Chemicals and allied products	1,074.4	1,099.0	1,102.6	1,395.0	1,072	1,094	1,096	1,091	1,095	1,093
Petroleum and coal products	164.2	166.0	166.3	165.0	162	162	163	163	163	165
Rubber and misc. plastics products	830.7	831.2	838.6	839.7	830	843	841	841	842	839
Leather and leather products	145.8	134.1	142.2	140.7	144	142	142	140	140	139
Service-producing industries	80,844	82,636	82,496	83,412	80,894	82,638	82,959	83,098	83,159	83,476
Transportation and public utilities	5,627	5,737	5,624	5,763	5,581	5,700	5,716	5,736	5,625	5,717
Transportation	3,410	3,503	3,521	3,598	3,365	3,484	3,500	3,524	3,539	3,552
Communication and public utilities	2,217	2,234	2,103	2,165	2,216	2,216	2,216	2,212	2,086	2,165
Wholesale trade	6,090	6,279	6,291	6,281	6,071	6,222	6,230	6,237	6,254	6,263
Durable goods	3,591	3,722	3,725	3,712	3,590	3,685	3,693	3,700	3,706	3,712
Nondurable goods	2,499	2,557	2,566	2,569	2,481	2,537	2,537	2,537	2,548	2,551
Retail trade	19,266	19,684	19,757	19,702	19,188	19,528	19,551	19,586	19,620	19,624
General merchandise stores	2,404.8	2,425.2	2,428.6	2,438.9	2,452	2,491	2,493	2,482	2,483	2,486
Food stores	3,123.2	3,290.2	3,290.7	3,291.6	3,122	3,245	3,262	3,276	3,292	3,292
Automotive dealers and service stations	2,132.9	2,182.6	2,182.9	2,172.9	2,115	2,159	2,155	2,155	2,153	2,154
Eating and drinking places	6,449.7	6,535.4	6,576.8	6,551.0	6,296	6,348	6,362	6,370	6,385	6,397
Finance, insurance, and real estate	6,706	6,913	6,918	6,853	6,695	6,790	6,808	6,815	6,834	6,844
Finance	3,282	3,357	3,358	3,330	3,288	3,320	3,320	3,324	3,335	3,337
Insurance	2,087	2,142	2,141	2,132	2,092	2,123	2,129	2,131	2,135	2,138
Real estate	1,337	1,414	1,419	1,391	1,315	1,347	1,359	1,360	1,364	1,369
Services	25,970	27,216	27,235	27,234	25,888	26,711	26,931	26,973	27,046	27,153
Business services	5,701.8	5,826.3	5,864.1	5,898.8	5,631	5,776	5,799	5,786	5,880	5,846
Health services	7,229.2	7,685.8	7,717.5	7,738.9	7,220	7,578	7,616	7,648	7,694	7,739
Government	17,185	16,807	16,671	17,579	17,471	17,687	17,723	17,751	17,780	17,875
Federal	2,968	3,033	3,010	2,978	2,985	2,999	2,995	3,000	2,998	2,996
State	4,016	3,921	3,932	4,096	4,088	4,119	4,136	4,145	4,161	4,171
Local	10,201	9,853	9,729	10,505	10,398	10,569	10,592	10,606	10,621	10,708

p = preliminary.

Table B-2. Average weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	Sept. 1988	July 1989	Aug. 1989p/	Sept. 1989p/	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989p/	Sept. 1989p/
Total private	34.8	35.1	34.9	34.7	34.7	34.6	34.6	34.8	34.6	34.6
Mining	42.2	42.5	42.8	43.0	(2)	(2)	(2)	(2)	(2)	(2)
Construction	38.4	38.9	38.9	38.6	(2)	(2)	(2)	(2)	(2)	(2)
Manufacturing	41.3	40.5	40.8	41.1	41.1	41.0	41.0	41.0	40.9	41.0
Overtime hours	4.2	3.7	3.8	4.1	3.9	3.8	3.8	3.9	3.7	3.8
Durable goods	42.0	40.9	41.2	41.6	41.9	41.5	41.5	41.5	41.5	41.5
Overtime hours	4.3	3.7	3.8	4.1	4.1	3.9	3.9	4.0	3.9	3.9
Lumber and wood products	40.3	39.5	40.4	40.2	40.1	39.7	39.8	39.6	40.2	40.0
Furniture and fixtures	40.1	38.8	39.8	40.1	39.6	39.4	39.4	39.5	39.6	39.6
Stone, clay, and glass products	42.8	42.5	42.8	42.7	42.3	41.9	42.2	42.3	42.5	42.3
Primary metal industries	44.0	42.6	42.5	42.6	43.9	43.2	43.3	43.0	42.9	42.5
Blast furnaces and basic steel products	44.7	43.2	43.0	42.5	44.5	43.6	43.7	43.2	43.4	42.3
Fabricated metal products	42.1	40.7	41.1	41.5	42.0	41.7	41.5	41.5	41.4	41.4
Machinery, except electrical	42.7	41.9	41.7	42.2	42.7	42.5	42.5	42.4	42.2	42.2
Electrical and electronic equipment	41.0	40.0	40.7	41.1	40.9	40.7	40.7	40.6	40.9	41.1
Transportation equipment	43.0	41.6	41.6	42.7	43.0	42.5	42.5	42.6	42.5	42.7
Motor vehicles and equipment	44.1	41.4	41.4	43.7	44.1	42.8	42.7	42.6	42.8	43.7
Instruments and related products	41.6	40.8	40.7	40.8	41.6	41.1	41.3	41.4	41.0	40.8
Miscellaneous manufacturing	39.3	38.6	39.3	39.6	39.2	39.6	39.4	39.3	39.5	39.5
Nondurable goods	40.5	40.0	40.2	40.5	40.2	40.2	40.3	40.2	40.2	40.2
Overtime hours	4.1	3.7	3.8	4.1	3.7	3.7	3.6	3.8	3.6	3.7
Food and kindred products	40.8	40.9	41.1	41.2	40.3	40.9	40.7	41.0	40.7	40.7
Tobacco manufactures	41.2	37.9	37.3	39.6	(2)	(2)	(2)	(2)	(2)	(2)
Textile mill products	41.4	40.6	41.3	41.1	41.0	41.4	41.4	41.2	41.0	40.7
Apparel and other textile products	37.1	36.7	37.1	37.1	37.1	37.1	37.1	37.0	37.0	37.1
Paper and allied products	43.7	42.9	43.1	43.7	43.2	43.3	43.3	43.2	43.4	43.2
Printing and publishing	38.5	37.4	37.8	38.3	38.1	37.7	37.8	37.6	37.7	37.9
Chemicals and allied products	42.3	42.2	42.0	42.7	42.3	42.1	42.5	42.5	42.3	42.7
Petroleum and coal products	44.8	44.3	43.7	44.1	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and misc. plastics products	41.7	40.8	41.1	41.5	41.7	41.5	41.5	41.4	41.4	41.5
Leather and leather products	37.5	37.8	38.5	38.3	37.5	37.4	37.9	37.7	38.2	38.3
Transportation and public utilities	39.3	39.8	39.3	39.4	39.4	39.5	39.4	39.4	38.9	39.3
Wholesale trade	38.1	38.3	38.1	38.1	38.1	37.9	38.0	38.1	38.0	38.1
Retail trade	29.1	29.9	29.6	28.8	29.1	28.9	28.9	29.2	28.8	28.7
Finance, insurance, and real estate	35.8	36.3	35.8	35.7	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.5	33.1	32.9	32.6	32.6	32.5	32.5	32.8	32.6	32.7

1/ Data relate to production workers in mining and manufacturing; construction workers in construction; and nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for approximately four-fifths of the total employees on private nonagricultural payrolls.

2/ These series are not published seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficent precision.
p = preliminary.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	Sept. 1988	July 1989	Aug. 1989p/	Sept. 1989p/	Sept. 1988	July 1989	Aug. 1989p/	Sept. 1989p/
Total private	$9.40	$9.63	$9.60	$9.76	$327.12	$338.01	$335.04	$338.67
Seasonally adjusted	9.37	9.69	9.68	9.73	325.14	337.21	334.93	336.66
Mining	12.82	12.95	13.04	13.19	541.00	550.38	558.11	567.17
Construction	13.16	13.33	13.33	13.48	505.34	518.54	518.54	520.33
Manufacturing	10.25	10.47	10.44	10.54	423.33	424.04	425.95	433.19
Durable goods	10.78	10.99	10.98	11.09	452.76	449.49	452.38	461.34
Lumber and wood products	8.69	8.92	8.93	8.97	350.21	352.34	360.77	360.59
Furniture and fixtures	8.09	8.26	8.29	8.41	324.41	320.49	329.94	337.24
Stone, clay, and glass products	10.55	10.75	10.76	10.81	451.54	456.88	460.53	461.59
Primary metal industries	12.24	12.40	12.35	12.41	538.56	528.24	524.88	528.67
Blast furnaces and basic steel products	14.07	14.33	14.28	14.35	628.93	619.06	614.04	609.88
Fabricated metal products	10.34	10.53	10.50	10.63	435.31	428.57	431.55	441.15
Machinery, except electrical	11.09	11.35	11.34	11.46	473.54	475.57	472.88	483.61
Electrical and electronic equipment	10.19	10.41	10.41	10.46	417.79	416.40	423.69	429.91
Transportation equipment	13.44	13.61	13.70	13.83	577.92	566.18	569.92	590.54
Motor vehicles and equipment	14.10	14.07	14.21	14.42	621.81	582.50	588.29	630.15
Instruments and related products	9.99	10.31	10.28	10.33	415.58	420.65	418.40	421.46
Miscellaneous manufacturing	8.01	8.29	8.19	8.35	314.79	319.99	321.87	330.66
Nondurable goods	9.50	9.77	9.71	9.80	384.75	390.80	390.34	396.90
Food and kindred products	9.11	9.35	9.27	9.32	371.69	382.42	381.00	383.98
Tobacco manufactures	14.09	16.34	15.61	14.21	580.51	619.29	582.25	562.72
Textile mill products	7.43	7.66	7.70	7.76	307.60	311.00	318.01	318.94
Apparel and other textile products	6.21	6.28	6.32	6.40	230.39	230.48	234.47	237.44
Paper and allied products	11.72	12.04	11.92	12.01	512.16	516.52	513.75	524.84
Printing and publishing	10.70	10.83	10.90	11.04	411.95	405.04	412.02	422.83
Chemicals and allied products	12.75	13.12	13.09	13.15	539.33	553.66	549.78	561.51
Petroleum and coal products	15.01	15.34	15.25	15.45	672.45	679.56	666.43	681.35
Rubber and misc. plastics products	9.22	9.45	9.44	9.51	384.47	385.56	387.98	394.67
Leather and leather products	6.30	6.54	6.54	6.60	236.25	247.21	251.79	252.78
Transportation and public utilities	12.40	12.58	12.50	12.67	489.80	500.68	491.25	499.20
Wholesale trade	10.04	10.40	10.35	10.44	382.52	398.32	394.34	397.76
Retail trade	6.38	6.49	6.49	6.61	185.66	194.05	192.10	190.37
Finance, insurance, and real estate	9.14	9.59	9.49	9.60	327.21	348.12	339.74	342.72
Services	9.00	9.33	9.29	9.48	292.50	308.82	305.64	309.05

1/ See footnote 1, table B-2.

p = preliminary.

Table B-4. Average hourly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry, seasonally adjusted

Industry	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989p/	Sept. 1989p/	Percent change from: Aug. 1989- Sept. 1989
Total private2/:							
Current dollars	$9.37	$9.60	$9.62	$9.69	$9.68	$9.73	0.5
Constant (1977) dollars3/	4.83	4.77	4.77	4.79	4.79	N.A.	(4)
Construction	13.07	13.32	13.32	$13.42	$13.37	$13.39	.1
Manufacturing	10.25	10.42	10.45	10.48	10.52	10.54	.2
Excluding overtime5/	9.78	9.97	9.99	10.01	10.05	10.07	.2
Transportation and public utilities	12.37	12.54	12.54	12.61	12.51	12.64	1.0
Wholesale trade	10.03	10.28	10.33	10.44	10.39	10.44	.5
Retail trade	6.36	6.49	6.52	6.54	6.56	6.58	.3
Finance, insurance, and real estate	9.18	9.45	9.53	9.68	9.56	9.64	.8
Services	9.00	9.33	9.34	9.46	9.43	9.48	.5

1/ See footnote 1, table B-2.

2/ Includes mining, not shown separately, because its seasonal component is too small to be separated out with sufficient precision.

3/ The Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) is used to deflate this series.

4/ Change was 0.0 percent from July 1989 to August 1989, the latest month available.

5/ Derived by assuming that overtime hours are paid at the rate of time and one-half.

N.A. = not available.

p/ = preliminary.

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

(1977=100)

Industry	Not seasonally adjusted				Seasonally adjusted					
	Sept. 1988	July 1989	Aug. 1989p/	Sept. 1989p/	Sept. 1988	May 1989	June 1989	July 1989	Aug. 1989p/	Sept. 1989p/
Total private	126.9	131.2	131.1	130.0	125.6	127.6	128.1	129.2	128.4	128.6
Goods-producing industries	104.9	103.6	105.5	105.6	101.8	102.4	102.5	103.0	103.1	102.5
Mining	82.7	80.7	85.3	85.0	81.1	81.8	81.2	80.3	83.7	83.3
Construction	149.7	156.1	158.1	154.5	138.1	138.2	139.3	142.7	143.0	142.9
Manufacturing	97.2	94.5	96.3	97.1	95.7	96.4	96.4	96.3	96.3	95.6
Durable goods	95.0	91.6	92.8	93.9	94.1	94.3	94.0	93.8	93.9	92.9
Lumber and wood products	107.1	105.4	107.8	106.3	103.7	103.7	103.4	102.6	103.6	102.8
Furniture and fixtures	114.4	107.9	112.0	113.4	112.6	112.9	112.6	113.2	111.9	111.6
Stone, clay, and glass products	93.0	92.3	93.0	91.6	89.6	89.3	89.8	90.0	90.2	83.6
Primary metal industries	69.3	66.2	66.7	66.5	68.9	68.2	68.5	67.9	67.8	66.0
Blast furnaces and basic steel products	54.8	52.7	52.2	51.1	54.2	52.3	52.6	52.0	52.8	51.2
Fabricated metal products	92.4	87.6	89.1	90.7	91.5	91.7	90.8	90.7	90.2	89.7
Machinery, except electrical	91.2	91.9	91.4	92.8	91.2	93.7	93.8	94.0	93.3	92.9
Electrical and electronic equipment	101.4	94.9	97.2	98.1	100.6	98.4	97.8	97.6	98.0	97.7
Transportation equipment	100.5	94.1	95.0	98.3	100.0	100.5	99.5	98.6	100.1	97.8
Motor vehicles and equipment	92.3	80.8	33.3	87.5	92.3	90.2	88.1	85.7	89.5	86.7
Instruments and related products	113.6	114.7	114.9	115.5	113.7	115.8	116.1	116.9	115.8	115.8
Miscellaneous manufacturing	86.8	81.9	87.4	88.1	84.8	86.6	86.2	85.7	87.0	86.1
Nondurable goods	100.4	98.9	101.4	101.9	98.2	99.5	99.9	100.1	99.8	99.6
Food and kindred products	108.2	108.6	112.8	113.4	100.4	103.3	104.3	106.4	105.1	105.3
Tobacco manufactures	82.9	62.5	66.2	75.2	74.3	69.6	69.0	70.5	66.9	68.0
Textile mill products	81.9	78.5	81.6	81.0	80.6	81.5	81.5	81.3	80.6	79.7
Apparel and other textile products	84.6	81.5	85.1	84.6	84.2	85.4	85.2	84.9	84.9	84.2
Paper and allied products	103.2	102.1	102.9	103.7	101.7	102.3	102.3	102.7	103.2	102.1
Printing and publishing	137.9	136.3	137.8	139.6	137.2	137.8	138.3	137.7	138.1	138.7
Chemicals and allied products	99.2	101.3	101.4	102.3	98.7	100.5	101.8	101.5	101.2	101.8
Petroleum and coal products	86.0	86.3	85.3	85.7	84.1	83.5	84.3	83.2	83.4	83.5
Rubber and misc. plastics products	117.9	115.2	117.4	118.8	117.8	119.6	118.9	118.8	119.2	118.9
Leather and leather products	56.2	52.2	56.5	55.5	55.4	54.7	55.5	54.7	55.0	54.6
Service-producing industries	139.2	146.5	145.2	143.5	138.8	141.5	142.2	143.7	142.4	143.0
Transportation and public utilities	115.3	118.8	114.7	118.1	114.1	117.3	117.3	117.7	113.4	116.7
Wholesale trade	124.4	128.7	128.3	128.0	123.8	126.1	126.7	127.2	127.2	127.5
Retail trade	126.2	132.6	131.9	128.0	125.9	127.2	127.4	128.9	127.5	126.9
Finance, insurance, and real estate	140.7	147.6	145.9	143.4	140.9	141.9	142.7	145.0	143.3	143.6
Services	163.3	173.9	173.1	171.2	163.2	167.5	169.0	170.8	170.3	171.3

1/ See footnote 1, table B-2.

p = preliminary.

Table B-6. Diffusion indexes of employment change, seasonally adjusted

(Percent)

Time span	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Private nonagricultural payrolls, 349 industries1/											
Over 1-month span:												
1987	55.6	59.3	61.0	61.9	58.6	59.7	65.3	60.6	63.0	67.8	64.5	60.7
1988	60.7	63.5	63.0	62.8	61.3	67.2	63.6	58.0	55.4	63.9	68.2	64.6
1989	68.3	60.5	61.0	58.2	55.6	59.7	55.4	p/56.3	p/47.4			
Over 3-month span:												
1987	60.7	62.0	66.6	65.2	65.8	65.9	67.9	71.1	71.2	72.3	70.9	65.9
1988	64.8	65.6	69.5	70.2	71.1	71.9	71.2	64.2	65.3	70.1	73.4	74.6
1989	71.6	70.1	64.5	61.9	61.6	60.7	p/62.5	p/52.1				
Over 6-month span:												
1987	67.3	65.8	64.8	66.8	67.6	69.5	71.3	73.3	73.2	71.5	71.8	72.2
1988	69.9	70.2	71.5	73.9	73.9	69.1	70.2	74.6	73.5	73.9	74.5	75.8
1989	75.1	69.5	68.2	66.0	p/63.5	p/58.5						
Over 12-month span:												
1987	66.6	68.2	68.2	71.8	71.9	72.5	72.2	74.1	75.4	72.5	73.8	76.9
1988	76.2	76.1	74.8	74.6	75.8	74.9	78.1	75.5	75.5	74.8	74.9	74.1
1989	73.2	p/72.5	p/69.1									
	Manufacturing payrolls, 141 industries1/											
Over 1-month span:												
1987	44.3	53.9	54.3	55.7	55.3	54.3	62.8	59.9	63.8	59.9	65.6	56.4
1988	58.5	56.0	55.0	59.9	58.5	61.7	59.6	51.1	49.3	62.8	64.9	58.5
1989	62.4	53.5	53.2	49.6	46.8	48.6	49.6	p/47.2	p/34.8			
Over 3-month span:												
1987	52.1	51.4	59.6	61.3	58.5	62.8	67.0	71.6	68.4	70.6	67.7	64.5
1988	63.1	61.0	62.4	64.9	67.4	67.0	64.5	58.2	62.1	66.7	71.3	70.9
1989	67.4	63.8	55.7	51.8	49.3	48.6	p/49.6	p/35.5				
Over 6-month span:												
1987	57.4	56.7	55.3	62.4	64.9	67.0	67.4	70.6	71.3	69.5	69.5	68.1
1988	66.3	66.3	67.7	69.5	66.7	64.2	66.0	70.9	68.8	69.9	71.6	74.1
1989	69.5	58.5	55.7	52.8	p/50.4	p/40.4						
Over 12-month span:												
1987	55.3	58.5	58.5	63.5	66.3	67.4	71.6	72.7	71.6	69.1	68.4	72.3
1988	73.8	70.2	70.9	71.6	72.0	69.9	70.9	69.1	71.6	70.2	69.9	67.0
1989	63.1	p/63.1	p/55.3									

1/ Based on seasonally adjusted data for 1-, 3-, and 6-month spans and unadjusted data for the 12-month span. Data are centered within the span.
p=preliminary.
NOTE: Figures are the percent of industries with employment increasing plus one- half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing employment.

Senator **Bryan**. Fine. Thank you very much, Mrs. Norwood.

As you indicated in your testimony, the unemployment figures have stayed in a fairly narrow range from April, indeed almost the entire year now.

Do you see any indication that there may be a breakout from that range, or do you see any indication, looking at the economy long term, that there may be a deterioration which would take it out of that range?

Mrs. **Norwood**. I don't think we can tell very much about future unemployment from this month's numbers. What we do know for the future is that the labor force is growing more slowly and is projected to grow ever more slowly through the rest of this century. It is a lot easier to have a lower unemployment rate when you have, say, about 120,000 to 125,000 people entering the labor force per month—easier in terms of getting them employed—than when you have 200,000 a month.

Senator **Bryan**. Sure.

Mrs. **Norwood**. We had roughly 2 million entering the labor force over the last year. We expect that there will be some downward pull on unemployment because of that. On the other hand, we are seeing, of course, increasing proportions of the labor force made up of minorities. And minorities have, as we know, a much higher unemployment rate because they have a harder time in the labor market. So that is a little bit of an upward pull.

There is another downward pull from the fact that there are fewer teenagers. We had a decline in the labor force of about 230,000 teenagers over the last year. Teenagers are always experimenting, as they ought to be, in the labor market, and as a result that produces upward pressure on the unemployment rate.

So, I guess all of this taken together suggests that it will be easier for us as a country because of these demographic trends to have a somewhat lower unemployment rate. But, of course, we need to look at what the industrial composition of this is going to be.

Senator **Bryan**. I believe you used the number that about 2 million entered the job force this year. Based upon your demographic analysis and projections, can you give us some numbers for what we are looking at in the outyears, just in round terms? If it is 2 million this year or this past year, are we projecting 1,900,000 next year? How sharply does that curve begin to fall off based upon your demographic projections?

Mrs. **Norwood**. I don't have the specific numbers with me, but I can tell you that the labor force was growing in the 1970's at about a rate of about 2.7 percent a year, and we are projecting that it will grow at only about half of that rate. A new set of labor force projections will be issued later this month.

Senator **Bryan**. That is rather substantial then.

Mrs. **Norwood**. Yes.

Senator **Bryan**. Statistically.

Mrs. **Norwood**. Part of this will turn around because the birth rate has turned around. But that will be several years off.

Senator **Bryan**. I did not hear it, although I know that you gave the number for black teenagers.

Mrs. **Norwood**. The unemployment rate.

Senator **Bryan**. Yes.

Mrs. **Norwood**. The unemployment rate for black teenagers rose to 37.3 percent, a very high number.

I should point out, however, that is a very volatile rate. Black teenagers are a very small group of the population and their rate bounces up and down. Several months of data are needed for us to be sure what is happening.

It may well be that a lot of minority youth had jobs during the summer and now those jobs have ended. It may be that next month we will see a different picture.

Actually you have to have a little more than a 5 percentage point increase in the unemployment rate for this small group for it to be statistically significant.

Senator **Bryan**. Tell us what the number had been throughout the summer, any of the data that you have from the previous quarter, so that we can put that number into context.

Mrs. **Norwood**. In May it was 27.9 percent—no, I'm sorry.

Why don't you give those numbers, Mr. Plewes?

Mr. Plewes has a longer list than I.

Mr. **Plewes**. In the spring it was in the 30's range, 30.8 percent in April and 32.4 percent in May. It went up somewhat in June to 36.5 percent. In July and August it went down considerably to 27.4 and 31.6 percent. This month again it has crept up to 37.3 percent.

Senator **Bryan**. Mr. Plewes, based upon the last year, just a quick overview, is it within the range or are we pushing——

Mr. **Plewes**. This month is at the high part of the range. This is as high as it has been for the last 2 years now.

Senator **Bryan**. Mrs. Norwood indicated that because of the relatively small population size, it becomes very volatile. How many folks are we talking about? What numbers are we using in terms of the black teenage population?

Mrs. **Norwood**. We have a black teenage labor force that is under 1 million, and the number unemployed is less than 350,000.

Now, there are more black teenagers who are not in the labor force, of course, and one of the figures that we prefer to look at in trying to judge what is happening with minorities is the employment-population ratio. That is the proportion of the population of a given age that actually has a job. There is a lot more discouragement among minority workers, than there is otherwise, and so they don't look for work. And as you know, if you don't look for work, you are not counted as unemployed in our system. And the E/P ratio for black teenagers is very low. It is around 26 percent this month. And for white teenagers, for example, that ratio is just about twice that amount.

Senator **Bryan**. So this is a disturbing trend. It has been with us for a while, but it appears to be getting worse, if the numbers are as Mr. Plewes explained them.

Mrs. **Norwood**. I think that is true. We had some improvement during the year. We are now clearly seeing increases in their unemployment rates.

I would prefer to wait another couple of months before discerning a complete trend. But we never like to see these unemployment rates going up.

Senator **Bryan**. Let me ask you, can we attribute that to one factor more than another? Is it geographic, in part—that is, in large urban cities where minority populations are larger, is there overall less employment growth across the spectrum? Is it attributable, as I suppose many of us believe, to a lack of job skills and some educational difficulties that are encountered oftentimes by minority youth?

Give us your assessment, if you will, on that.

Mrs. **Norwood**. Well, I think you have indicated quite clearly what the problems are. There is a concentration of our minority population in central cities, and we have had a geographic rearrangement of industry in this country. We have moved a lot of industry, a lot of jobs out of the central cities.

The Hispanic population is concentrated in the border areas in some cities and just a few States, really.

I think that the big problem, however, particularly as we look toward the future, is clearly an educational problem, a training problem. We have a group of young people and some older ones who just have not had the opportunity to get the kind of education that is really needed to compete in the kind of labor market that we are developing.

Part of it is because many of them are living in conditions that are not conducive to education. If you are living in poverty, it is often very difficult psychologically to take advantage of some of the opportunities that may be there.

I think it is generally recognized that our educational system is not really providing the kind of background that is necessary for many of these people. The Hispanics often have a language problem that is added to this.

So I think it is a very serious problem.

Senator **Bryan**. How does the black teenager unemployment figure compare, for example, to that for Hispanic teenagers? Is there a parallel situation? And my question would be in addition to that. Much of the Hispanic population is spread across the Southwest and southern California areas which are enjoying a larger growth rate in terms of their economies than some of the other parts of the country. Does that have an impact upon the unemployment numbers that we see for those Hispanic teenagers?

Mrs. **Norwood**. We do not publish detailed breakouts of the Hispanic population on a monthly basis. However, we know based on our quarterly estimates that the unemployment rate for Hispanic teenagers is higher than the rate for white teenagers, but lower than for black teenagers.

In general, we know that the Hispanic population has a better time in the labor force than the black population, but clearly has higher unemployment rates than the white population. And I am sure that any analysis of Hispanic youth is going to show that.

One of the differences is that the Hispanic population is much younger than the other populations. They are just a much younger group. And, of course, there is continuing immigration of the Hispanics. They seem to be concentrated, as I recall, in eight States.

And these are groups, as we move forward into the next century, we are going to have to pay a lot of attention to.

Senator BRYAN. I have heard some numbers, and I do not recall precisely what they are, but they indicate for the year 2000 the ethnic breakdown of our work force will reflect, as you were suggesting, an increased percentage of Hispanics.

Do you happen to have that number, what that is going to be?

Mrs. NORWOOD. Those are based on projections, and I believe I have those figures with me, if I can find them. It's very clear that we are going to be seeing a much larger proportion of the labor force made up of minorities. We expect, for example, that by the year 2000 roughly 10 percent of the labor force will be Hispanics; it is now about 7 percent. So it will be going up. And something like 12 percent will be blacks; that also is going up somewhat.

It is a little bit difficult to separate these categories because there are some overlaps. Most Hispanics are white, but some are black and some are "other." You know, we have a system in our data survey of having people identify their ethnic background and their race.

But I will supply some materials on our projections by race and ethnicity for the record.

Senator BRYAN. If you will.

[The following information was subsequently supplied for the record:]

Table 1. Civilian labor force by sex, age, race, and Hispanic origin, actual 1972, 1979, and moderate growth projections 2000

Group	Level (in thousands)				Change (in thousands)				Percent change	
	1972	1979	1986	Projected, 2000	1972–79	1979–86	1986–2000	1972–79	1979–86	1986–2000
Total, 16 and over	87,037	104,960	117,837	138,775	17,923	12,877	20,938	20.6	12.3	17.8
Men, 16 and over	53,556	60,727	65,423	73,136	7,171	4,696	7,713	13.4	7.7	11.8
16 to 24	11,243	13,645	12,251	11,506	2,402	−1,394	−745	21.4	−10.2	−6.1
25 to 54	33,133	37,926	44,406	53,024	4,793	6,480	8,618	14.5	17.1	19.4
55 and over	9,180	9,156	8,766	8,606	−24	−390	−160	−.3	−4.3	−1.8
Women, 16 and over	33,481	44,233	52,414	65,639	10,752	8,181	13,225	32.1	18.5	25.2
16 to 24	8,943	11,760	11,117	11,125	2,817	−643	8	31.5	−5.5	.1
25 to 54	19,192	26,594	35,159	47,756	7,402	8,565	12,597	38.6	32.2	35.8
55 and over	5,346	5,879	6,138	6,758	533	259	620	10.0	4.4	10.1
White, 16 and over	77,275	91,922	101,801	116,701	14,647	9,879	14,900	19.0	10.7	14.6
Black, 16 and over	8,748	10,665	12,684	16,334	1,917	2,019	3,650	21.9	18.9	28.8
Asian and other,[1] 16 and over	—	2,373	3,352	5,740	—	979	2,388	—	41.3	71.2
Hispanic,[2] 16 and over	—	5,215	8,076	14,086	—	2,861	6,010	—	54.9	74.4

Group	Percent distribution				Growth rate		
	1972	1979	1986	Projected, 2000	1972–79	1979–86	1986–2000
Total, 16 and over	100.0	100.0	100.0	100.0	2.7	1.7	1.2
Men, 16 and over	61.5	57.9	55.5	52.7	1.8	1.1	.8
16 to 25	12.9	13.0	10.4	8.3	2.8	−1.5	−.4
25 to 54	38.1	36.1	37.7	38.2	1.9	2.3	1.3
55 and over	10.5	8.7	7.4	6.2	(3)	−.6	−.1
Women, 16 and over	38.5	42.1	44.5	47.3	4.1	2.5	1.6
16 to 24	10.3	11.2	9.4	8.0	4.0	−.8	(3)
25 to 54	22.1	25.3	29.8	34.4	4.8	4.1	2.2
55 and over	6.1	5.6	5.2	4.9	1.4	.6	.7
White, 16 and over	88.8	87.6	86.4	84.1	2.5	1.5	1.0
Black, 16 and over	10.1	10.2	10.8	11.8	2.9	2.5	1.8
Asian and other,[1] 16 and over	—	2.3	2.8	4.1	—	5.1	3.9
Hispanic,[2] 16 and over	—	5.0	6.9	10.2	—	6.4	4.1

[1] The "Asian and other" group includes American Indians, Alaskan Natives, Asians, and Pacific Islanders. The historic data are derived by subtracting "Black" from the "Black and other" group; projections are made directly.

[2] Persons of Hispanic origin may be of any race. Labor force data for Hispanics are not available before 1976.

[3] The rate is −0.05 to 0.05 percent.

NOTE: Dash indicates data not available.

Senator **Bryan**. To what extent does this slowdown in the unemployment rate—or actually the increase in the unemployment numbers—reflect a change in terms of the trade balances, the extent to which the dollar has appreciated in value against other international currencies? Do you see any direct correlation there, and if so, can you develop that for us a little bit?

Mrs. **Norwood**. While there is some correlation, it is not entirely the trade balance. For example, one-third of the drop in manufacturing jobs this month, the month of September, was in automobile factories. That is partly competition from abroad. But there is also a change in the demographic profile of the population which has reduced the demand for automobiles. There are fewer young people growing up and reaching the age to buy their first car. There is a kind of satiated demand, in a sense, in many families, and the automobile companies all over the world actually are having to adjust to those changes.

We also have, I think, been seeing a shift in the way in which employers are looking at their inventories. You remember that back in the 1970's there was a lot of discussion about the lack of adequate inventory control. The 1973 to 1975 recession was blamed, at least in part, on inventory problems. We have learned a lot since then, maybe because we went through a period of very high interest rates for a while.

But in any case, entrepreneurs are trying to maintain much leaner inventories. They are trying to use up materials and then resupply them as quickly as they can. It is just good business to do that. So that is part of it.

In addition, the dollar rose, and that meant that our profits were squeezed somewhat in those goods that are sold in foreign currencies.

If you cast your eye down along some of our tables, you will see that we had reductions in employment after seasonal adjustment, of course, in industries like steel and electrical and nonelectrical machinery as well as autos, fabricated metals, and a number of the others; even chemicals, which has been doing extremely well.

So, some of the weaknesses in employment is export related, but not all of it.

Senator **Bryan**. Going back a few quarters when the export numbers rose rather dramatically and manufacturing jobs increased, which sectors of the manufacturing economy accounted for most of the job growth that was attributed to increased exports?

Mrs. **Norwood**. It was mainly machinery, electrical.

Do you want to answer that question, Mr. Plewes?

Mr. **Plewes**. Job growth took place in electrical equipment, some of the fabricated metals industries, and some of the nonferrous metals during that time.

Senator **Bryan**. Those are the very industries that Mrs. Norwood has indicated had some declines. So there maybe a correlation there in terms of our trade data.

Mrs. **Norwood**. I should point out that September is a month in which we usually have a lot of employment growth. We didn't have that, and so after seasonal adjustment we have rather large declines. We had declines instead of increases, and that is exaggerated after seasonal adjustment.

The auto companies have been moving the specific months for their plant closings and their price incentives back and forth. So the timing of that, which accounted for about 35,000 of the drop in manufacturing employment, may be somewhat out of sync with our seasonal adjustment factors.

The rest of the drop, however, appears to reflect some slow down in manufacturing. I would say that I have more confidence in the data because the drop is so widespread.

Senator **Bryan**. How much should we read into the September figure if it is a month in which we ordinarily see a substantial or a marked increase that did not occur. We have the slight decrease that your information shows—is that prophetic? Does that indicate that things in the fall will go down?

Mrs. **Norwood**. I would prefer to wait for another couple of months to see how steep the declines in factory jobs are. But we do know that factory jobs have been declining since March. That is a fact, I think, whether we got an actual 105,000 in 1 month or whether some of this month's decline was a catchup from before. We need another month or so of data.

I think it is also true that our surveys are showing very clearly continued growth in services, particularly health services and business services. So you lose jobs in one area and you are gaining them in another. When you add those together, you have a slowdown in employment growth, without any doubt, but you still have employment growth.

Senator **Bryan**. What areas, if any, in the manufacturing sector show some signs of encouragement? Are there any things that are countercyclical that would indicate that there is some increased level of activity that might hold a bit more promise than the March through September numbers might suggest?

Mrs. **Norwood**. Let me take a stab at that and then turn it over to Tom Plewes, who knows more about it than I.

I think food processing has done a good bit better in the month of September. Chemicals have been doing well, as having printing and publishing, though they had small declines this month. Autos is a special case, we have talked about. And housing-related things are down; furniture, lumber, and wood.

Mr. **Plewes**. It is hard this month to find good news. But if you look back a few months——

Mrs. **Norwood**. In manufacturing, that is.

Mr. **Plewes**. If you look back a few months, you will see aircraft manufacturing has been very vigorous, and I think that has been a sign of strength. We don't know what the future is there. They have a lot of back orders still.

But within the manufacturing sector there has been a general slowdown, and that has been fairly pervasive except for some of the bright spots.

Senator **Bryan**. You mentioned aircraft, and from all of the information that we see in the general business periodicals and the business press, Boeing and McDonnell Douglas have back orders that will exist well into the next decade.

Are they expanding employment in these fields? I ask that in the context that some of the defense-related aerospace industries are experiencing a contraction, and for the layman, who doesn't have your statistical background and experience, the question occurs what is the ability of the expanding aircraft manufacturing industry, assuming that it is experiencing some expansion, to pick up people who seemingly have technical backgrounds in aerospace who are going to be displaced as a result of the curtailments that are occurring in the defense industry?

Mr. **Plewes**. I will try that.

We have seen so far a net increase in aircraft manufacturing, but we have also seen, as you say, the decline going on in defense. So one hopes that there is some absorption from the defense sector into the commercial sector. How much that will go on we don't know.

The rate of increase, I think, in commercial orders has slowed down a bit. So maybe that absorption won't happen in the future. But there has been a net increase still for the whole industry.

Mrs. **Norwood**. We may also be seeing a strike which will affect the numbers in the coming months.

Senator **Bryan**. Talking about the machinists?

Mrs. **Norwood**. Boeing.

Senator **Bryan**. Boeing. Yes.

A personal question. I have a young daughter who has compressed the 4-year undergraduate program into 5 years—at her father's expense.

Mrs. **Norwood**. She will be well educated.

Senator **Bryan**. She says, "Nobody does it in 4 years anymore, Dad," and I guess like most fathers I tend to believe everything my daughter has to say. But we hope, Mrs. Bryan and I, that May might see a teaching credential and diploma.

What does it look like for new teachers in terms of unemployment in that area, so that I might pass on words of encouragement along to her, hopefully?

Mrs. **Norwood**. As the parent of a son who decided after getting a bachelor's degree that the he really was in the wrong field and went back for another, I can certainly appreciate your feeling. I must say that he is now an engineer, and a very well-educated one.

I think it is very clear that there is a tremendous need in this country for good teachers, for well-qualified teachers at all levels of our system.

I have another son who is in the university system, and I might say that at times it is really discouraging because of the salaries. The salaries are generally not very high; much lower than in other fields for people who are as well qualified. And I believe that we need to change our whole attitude toward education.

But it is very clear that our birth rate has turned around some years ago and that we are now beginning to see more youngsters coming into our primary school system and they will, of course, move through the system.

Everywhere that I go, and I go out to States and talk to government officials, the one thing on their minds clearly is how to improve the educational system and how to attract better trained and better qualified people into the educational system.

So I think it is a great field.

Senator **Bryan**. There is some indication, as you know, that enrollment at undergraduate institutions in education is edging upward ever so slightly. There is also indication that in terms of the ACT and SAT standards which are used and bandied about rather frequently, that those numbers are improving as well.

We are talking then, I take it from your comment, of a need for more teachers. You will recall that there was a period of time in which there was a tremendous shortage.

Mrs. NORWOOD. Oh, yes.

Senator BRYAN. And then the prevailing, if not the accurate, wisdom was that there was a tremendous glut and nobody could find a job, where now, I take it, we are into an upswing in that cycle where there is going to be an increased need for teachers.

Mrs. NORWOOD. We believe that most of the 95,000 increase in local government that we are reporting for the month of September came from teachers.

Senator BRYAN. Well, those are words of encouragement. If we can finish the academic year, we might be able to help that statistic next year, Mrs. Norwood. I will tell her of the importance of her continued education plans in the national perspective.

I have a couple of other questions. Traditionally economists have told us over the years that when you have relatively high employment, you tend also to get relatively higher levels of inflation.

There seems to be almost a countertrend here, if indeed that was an accurate premise to begin with. We have had the inflation numbers improving, going down this year, and yet the unemployment number stays rather good with only a small deviation factor that you described.

What is occurring out there? How do you account for that? Or were those old texts simply inaccurate and maybe we need to revise our assessment of what the rules ought to be?

Mrs. NORWOOD. Well, I think that the discussion among economists that used to take place about noninflationary unemployment rates and also about the tradeoffs of the Phillips curve have shifted. Most people believe that those relationships have changed.

But what has really happened is quite simple, and that is that oil prices have declined. It is largely oil and food that have been bringing the Consumer Price Index up and also bringing them down.

I believe that one of the areas that is somewhat worrisome and that continues to move upward is health care prices. That, I think, is a major issue.

Senator BRYAN. Those have gone off the chart.

Mrs. NORWOOD. That is a major issue, I think, of public policy. But both the CPI and the PPI have been in the 4 to 5 percent range now for a couple of months, and that is mainly because of these two components.

Do you want to add something to that, Mr. Dalton?

Mr. DALTON. I don't think so other than to comment that a 4.5 or 5 percent inflation rate is not an especially low inflation rate.

Senator BRYAN. For those of us that survived the 1970's, the curve is skewed a bit.

Mrs. NORWOOD. In fact, it is in fact higher than the level at which President Nixon decided to institute price controls because of the runaway inflation. So our expectations have clearly shifted. But compared to what we were seeing before, it is really quite satisfactory behavior.

Senator **Bryan**. Mr. Dalton, we all recall the 1970's and what happened with OPEC. Then in the 1980's when the cartel's influence and cohesiveness fell apart, we had the benefit of that in the 1980's. The numbers were much better, but the prices really have not varied that much, have they, in terms of oil prices? That has been in a fairly narrow band, certainly not the dramatic increase that we saw from $3 a barrel to $20 a barrel at one point. The oil prices have remained relatively stable—I know they fluctuate a bit, but it has been a fairly narrow range, has it not?

Mr. **Dalton**. We are almost back to the point, the high point in gasoline prices, that we reached in 1981, I think. So the oil prices have fluctuated actually a great deal, not nearly as much as they did in those two "oil crises," but they have swung around quite a bit both up and down.

Senator **Bryan**. What kind of job skills do you see are going to be most in demand as we move into the 1990's and into the next century?

Mrs. **Norwood**. Clearly those requiring cognitive and technical skills. We are seeing that the professional, technical, and mangerial jobs are the occupations that are increasing and increasing fast. And we expect that pattern to continue into the next century. There will still be a need for some people to be messengers, although with the fax machines I am not so sure, and to drive trucks and things of that sort.

But basically the need is going to be greatest for people who have had the benefit of education and training. And the concern that I have is that the tilt in demand toward the occupations that require training is going to exacerbate the problem between what you might call the top and the bottom. The people, particularly the minorities that we were discussing before, who haven't had the same opportunities to get training, are going to be even more at a disadvantage. And that is why it is important for us to face this issue.

Senator **Bryan**. This may be a little beyond what is fair to ask, but let me try because you may have some thoughts.

One of the concerns, one of the great debates that goes on as you talk to school systems, school districts—and I have some experience in a different capacity, working at the State level—is, you know, how do we shape these vocational educational programs.

Everybody that you talk to recognizes that it is important, but there seems to be at least a bifurcation in approach. Do you teach job-specific types of vocational training or do you teach vocational education in a broader sense without the job specificity?

My concern has always been this. As you see the changing types of jobs in the marketplace, I think it is very, very difficult for high schools and special technical training centers that serve in some communities in lieu of the traditional high school to be terribly job specific, because this is no way of ascertaining within 5 or 10 years whether a change in technology will render that job skill obsolete and replace it with something that requires a different type of job skill.

Would you take a stab at that for me and tell me, if we know what some of these changes are that are occurring, how do we make that information available to the vocational people at the State level and to those who are involved in administering our school districts or school systems, because it strikes me that there is not a clear meshing in terms of what is occurring in the economy and what is occurring in the vocational curriculum.

Mrs. NORWOOD. That is a fair question. The Bureau of Labor Statistics has a program of occupational projections for the future, and we put out the Occupational Outlook Handbook, which is a best-seller for the U.S. Government.

We also have a quarterly magazine with articles on these issues.

We work closely with the vocational education people and the employment security people, the job service people in each of the States, to help them understand the data and to look at the data in their own environment. And a lot can be done with that kind of information to try to see what general skills will be required.

But we know, and I think everyone knows, that no one really can tell you what the future is going to be with absolute certainty.

And so, it seems to me that you are quite right, what we really have to do is to teach the kind of skills and background that enable people to adapt to change, because as I see the labor market in the future the real issue for a worker is going to be adaptability. People are going to have to move from one job to another.

This economy is in many ways a marvelous kind of churning pot; business establishments will open and they will close, and people have to be flexible.

Now, if you are going to be flexible and you are going to make the most of the opportunities, you have to have the basic education, you have to take some of the hard sciences, you have to understand the social sciences, and you have to have the basic equipment to move forward. And it is a continuing learning experience.

I think that there may well be in the future some change in the way training takes place in industry. In the past we have had large numbers of youngsters coming into the labor markets and companies therefore could plan to take in a large number of entry-level people, hopefully keep them and train them and advance them and so on. We now are going to be seeing, and certainly in the year 2000 and beyond, a work force that is somewhat older and more mature and therefore in many ways more able to adjust.

I think companies are going to have to pull people in from outside more than they have, and the result is that it is going to have to be a much more cooperative kind of training environment with public and private training meshing together in some way.

Senator BRYAN. We need to get you out on the circuit with us, because I do agree. I strongly agree. It does not just happen. I think for a lot of us who try to have this kind of dialogue with our professional educators, none of us that are involved at the policy level, at the congressional level, are suggesting that the curriculum needs to prepare everyone to go on to college or some postgraduate level of academic training. But these youngsters that are graduating who want to go into the job market, who have no particular interest in going on, need to have these basic skills that you have described.

I mean it just cannot be as it was when a number of us were in high school some years back in a different generation in which there was, you know, body shop. You know, you could learn to pound out the fenderwork and go on and find something. It has become far more complex than that.

And even the vocational offering has to have some substance to it in terms of the cognitive skills that you have talked about. It doesn't have to be calculus or trig or solid geometry, but we do have to make sure that that youngster understands math because of the job that he or she is going to find in the future. That may change as you suggest, it may very well require some basic understanding of math and the ability to read and to follow instructions and directions and to think for himself and herself.

And sometimes that message, I think, gets lost in the translation. To the extent that we can join forces and get that word across, I think it is going to be terribly helpful because there still is in some places the notion that all we need to do is to add a new course or a new program.

I think the problem is much more deep seated than that, and no educational system in America—and there are some that are more affluent than others—can provide all of the theoretical options that may be out there. There is just not that kind of resource.

And so there does have to be that common denominator of the basic skills, vocational and focused, as opposed to purely academic postgraduate, college and the graduate degrees beyond that level. And I see that as being very important, and your data would seem to reflect the need to do that.

Mrs. NORWOOD. Yes.

Senator BRYAN. Let's talk about earnings for a moment, and then I know you all have a lot of things to do.

You know, it is frequently stated that if one makes a comparison from the 1970's to today, that with the exception that many households today have two income earners, that real wages in this country have stagnated.

Mrs. Norwood, does the data bear that out? Is that an accurate statement? It certainly is often repeated in this country, and I hope that I have clearly framed the issue.

Mrs. NORWOOD. Yes, you have. It is a complex issue. It depends on a number of things, in particular on whether the price index that is used to deflate, to bring this into real terms, is consistent across the years. As you remember, in the early 1980's we changed the method of calculating the home ownership component of the CPI and it had some effect on the CPI. We have, for research purposes, developed an index that is consistent across the years.

It is quite clear that wages did not keep up with the price increases, the sort of super-hyper-inflation that we had in the late 1970's and early 1980's. It is also clear that the 1981–82 recession, which was after all one of the sharpest and steepest we have had, tended, particularly in the goods-producing areas, to restrain the increases in wages.

And so what you had, depending upon the year from which you start, which is a very important element, by the way, was a reduction in real earnings. Lately, as inflation, although it is still in the 4 to 5 percent range, has abated we have seen over the last few years some improvement in the situation. But, depending on which period you picked in the 1970's, you still find that there has been a decline in real earnings, depending on which measure you use.

If you want to look, for example, at per capita income it is at an all-time high, even after adjustment for inflation, as more of our families now have more than one earner. There are just more people working.

We are also seeing a larger supply of people now in the 25- to 35-year age group, which obviously means more competition there. There are more people also, just the sheer numbers, at the entry-level grades of occupations. If there are 10 grades in an occupation, the younger you are the closer you are to being the more junior and to getting the lower earnings. So there are a lot of reasons for the earnings mix.

We also, on the other hand, are seeing a big increase in the occupations in this country which have in the past paid higher salaries—managers, for example, professionals, attorneys, accountants, banking and finance industry as a whole—we are seeing a lot of change in that direction.

So, it is true that we have not had the kind of increases in real earnings that we had during the early part of the 1970's. The condition now is somewhat better than it was in the very late 1979 to 1980 period when we had double-digit inflation, but there are still complex problems in trying to analyze exactly which pieces of this are responsible for it.

Senator **Bryan**. My sense is that the typical or the average American family doesn't have the statistical insight that you have, but there is an intuitive feeling which oftentimes is not inaccurate—sometimes intuitive feelings bear out all of the statistical academic support data—that by and large they are not living as well as they did 10 or 15 years ago. You sense that as you go out and talk to people.

Now, I know that there are clearly some exceptions. We have seen some rather extraordinary salaries in terms of the securities industry in recent years that more than keep up with inflation, both by the 1970 standards and the standards of the 1980's. But that is not what most families experience.

Let's talk for just a moment about the numbers for last year. The data that has been provided indicate that average annual pay increased by 4.9 percent, if I am reading that correctly, for 1988.

Mr. Plewes, I see that you have the chart out there.

Mrs. **Norwood**. Yes.

Senator **Bryan**. Do I have that number correct?

Mr. **Plewes**. Yes.

Senator **Bryan**. Let's talk about 1988 for just a moment if we may. How did that number compare with numbers in this decade, if you have it there?

Mr. **Plewes**. I didn't bring it for that particular series and that number. We can use other series.

Senator **Bryan**. This is not an exercise in trying to stump the panel.

Mrs. **Norwood**. We don't mind being stumped. It's good for us.

Senator **Bryan**. What I am trying to do is to see whether that number is of itself statistically significant. Does it show a marked deviation, increase or decrease, from numbers in the immediate preceding years? Do you know that without specific reference to what the number was last year or the year 1987 and 1986?

Mrs. **Norwood**. Clearly in the recession years——

Senator **Bryan**. We know, yes.

Mrs. **Norwood**. We know what the situation is. These data are data which average across the entire country.

Senator **Bryan**. I understand.

Mrs. **Norwood**. And all of the industries. And they are very useful because you can break them down to look at a lot of individual areas.

Senator **Bryan**. Sure.

Mrs. **Norwood**. We have other data which look at this in a more perhaps macroeconomic manner. Our employment cost index, for example, has shown small increases on a recurring basis.

One of the interesting things that—I believe that we are seeing in our data a change in the way that people are getting compensation.

Senator **Bryan**. Could you share that with us?

Mrs. **Norwood**. There is a lot more attention being given now to fringe benefits which are provided by employers than there was, say, 20 years ago. And if you look at the cost to the employer of hiring someone, the fringe benefits now are up to at least about one-third or thereabouts.

Senator **Bryan**. The one we talked about, the health care package, is enormously expensive, and growing rapidly.

Mrs. **Norwood**. That's right. So we need to look at something more than just the basic wage and salary rates if we are going to look at how well off people are, then we need to look at what they may be getting that they might have to pay for otherwise.

Senator **Bryan**. You're talking about a total compensation package then?

Mrs. **Norwood**. Yes.

Senator **Bryan**. May I take it then that the annual pay terminology that we use here refers, I am assuming, to salary exclusive of the fringe package. Am I correct on that, Mr. Plewes?

Mr. **Plewes**. That is correct.

Senator **Bryan**. Again, taking the number 4.9 percent for 1988, did that keep pace with inflation? Was it greater than inflation?

Mrs. **Norwood**. Slightly more than inflation; slightly greater because our CPI was up about 4.4 percent over 1988, December to December.

Senator **Bryan**. So if the number of hours worked according to the national statistical average remained constant, that would indicate that folks in general would be slightly better off than they were the year before. Is that a correct conclusion?

Mrs. **Norwood**. If you are an average person——

Senator **Bryan**. And I realize that the mythical average person does not exist.

Mrs. **Norwood**. Yes.

Senator **Bryan**. The reason I ask that question is that presumably if the numbers reflect—and this is the next question—if people worked more hours during the 1988 period, then in point of fact their compensation or their annual pay may on a comparative basis, although larger, be less per unit hour worked. What do the numbers tell us about that?

Mr. PLEWES. I think you are correct. I don't have the breakdown of where that change, the 4.9 percent came from.

We do have another series which is based on our monthly establishment survey, which measures really just straight-time hourly earnings and then it magnifies that to weekly earnings. That series, which almost equates to take-home pay, which is what makes people think well or badly about their situation. That series over the past year now, has gone up by about 3.9 percent. Inflation during that same period has gone up by 4.7 percent or so.

So in those terms, in what you take home, the workers are going in the hole. When you take a look then at the 4.9 percent, that includes a mix of increased hours, occupational mix and so forth. That probably has to be taken into account also, what they take home, what makes them feel good about themselves. And that is the point that I think the Commissioner is making.

Senator BRYAN. Explain to me if the information that we have differs from your own, and we may be talking about a different comparative index.

We are told that between August 1988 and August 1989 real average weekly earnings for private production and nonsupervisory workers fell by 0.7 percent.

Mr. PLEWES. That is correct. That is the number we are talking about, yes, sir.

Senator BRYAN. That is the number you are talking about?

Mr. PLEWES. Yes. Workers real earnings fell behind by that amount.

Mrs. NORWOOD. You have to understand, of course, that when we take the average of all earnings that are paid by business establishments, we are including all of the workers, both temporary and full time, both full time and part time. So if the mix changes, you may get a change in the average.

The series which we have which holds the mix constant and which is essentially to the wage and compensation package as the CPI is to prices, is our employment cost index. This measure also suggests some dropoff in constant dollars for total compensation—the employer cost of fringes plus the wages and salaries.

In the 12 months ended in June of this year that series rose at a rate of about 4.5 percent in current dollars.

But if you deflate that, it is slightly negative. The price increases over that particular year were slightly more. So compensation costs were pretty flat in real terms. That is quite clear.

Senator BRYAN. That information, Mr. Plewes, that you indicated that you didn't have, if we could get you to supplement the record on that when you get a chance to do so.

[The following information was subsequently supplied for the record:]

Table 1. Total coverage (UI and UCFE) by ownership: Reporting units, employment, and wages, annual averages 1979-88

Year	Average reporting units	Annual average employment	Total annual wages (in thousands)	Annual wages per employee	Average weekly wage
			Total covered (UI and UCFE)[1]		
1979	4,808,042	88,826,000	$1,168,498,310	$13,155	$253
1980	4,727,492	89,183,857	1,282,196,041	14,377	276
1981	4,800,436	89,982,617	1,411,775,229	15,689	302
1982	4,874,727	88,370,388	1,479,186,027	16,738	322
1983	4,982,800	89,106,151	1,563,540,363	17,547	337
1984	5,137,550	93,607,886	1,718,001,840	18,353	353
1985	5,305,496	96,327,318	1,847,999,248	19,185	369
1986	5,429,134	98,241,874	1,961,526,204	19,966	384
1987	5,674,459	101,064,865	2,107,867,365	20,857	401
1988	5,812,061	104,271,495	2,280,569,543	21,871	421
			UI covered[1]		
1979	4,574,177	85,897,818	$1,115,315,378	$12,984	$250
1980	4,690,205	86,170,080	1,223,954,848	14,204	273
1981	4,762,283	87,045,372	1,347,970,816	15,486	298
1982	4,836,686	85,459,540	1,412,910,794	16,533	318
1983	4,943,930	86,181,034	1,493,303,475	17,328	333
1984	5,096,392	90,640,333	1,643,569,062	18,133	349
1985	5,263,961	93,286,026	1,769,072,256	18,964	365
1986	5,387,377	95,163,340	1,882,073,892	19,773	380
1987	5,632,436	97,959,354	2,024,538,049	20,667	397
1988	5,770,015	101,137,823	2,193,124,486	21,685	417
			Private industry covered		
1979	4,431,907	73,231,574	$961,173,591	$13,125	$252
1980	4,544,998	73,395,586	1,053,876,363	14,359	276
1981	4,617,788	74,384,167	1,164,380,665	15,654	301
1982	4,697,388	73,001,744	1,215,021,217	16,644	320
1983	4,802,158	73,710,321	1,283,726,098	17,416	335
1984	4,951,599	78,053,573	1,418,883,956	18,178	350
1985	5,116,467	80,438,201	1,526,206,290	18,974	365
1986	5,238,864	82,080,115	1,620,319,230	19,746	380
1987	5,481,615	84,574,193	1,744,030,556	20,621	397
1988	5,617,440	87,384,738	1,891,812,019	21,649	416
			State government covered		
1979	35,705	3,386,670	$44,978,369	$13,281	$255
1980	37,626	3,446,790	50,400,071	14,622	281
1981	42,468	3,435,604	53,665,439	15,620	300
1982	44,593	3,381,566	57,820,796	17,099	329
1983	46,379	3,391,301	61,074,452	18,009	346
1984	48,317	3,446,649	65,932,898	19,129	368
1985	50,033	3,518,193	71,557,818	20,339	391
1986	50,332	3,575,337	76,717,541	21,457	413
1987	51,617	3,653,733	82,299,400	22,525	433
1988	52,656	3,749,906	88,066,116	23,490	452
			Local government covered		
1979	106,549	9,278,678	$109,146,282	$11,763	$226
1980	107,562	9,326,745	119,658,047	12,830	247
1981	102,010	9,224,582	129,901,271	14,082	271
1982	94,686	9,075,309	140,044,486	15,431	297
1983	95,373	9,078,472	148,477,267	16,356	315
1984	96,453	9,139,241	158,749,457	17,370	334
1985	97,435	9,328,854	171,286,508	18,361	353
1986	98,157	9,547,147	185,014,271	19,379	373
1987	99,179	9,730,657	198,184,399	20,367	392
1988	99,893	10,002,193	213,203,110	21,316	410
			Federal Government covered (UCFE)		
1979	33,865	2,928,182	$53,182,932	$18,162	$349
1980	37,287	3,013,797	58,241,193	19,325	372
1981	38,155	2,937,245	63,804,413	21,723	418
1982	38,041	2,910,848	66,276,133	22,769	438
1983	38,871	2,925,117	70,236,886	24,012	462
1984	41,159	2,967,332	74,432,788	25,084	482
1985	41,536	3,041,291	78,926,992	25,952	499
1986	41,757	3,058,534	79,452,312	25,977	500
1987	42,024	3,105,512	83,329,316	26,833	516
1988	42,047	3,133,873	87,445,078	27,903	537

[1] Includes data for international or foreign government ownership, not shown separately.

NOTE. Detail may not add to totals because of rounding.

Senator **Bryan**. Finally, the phenomenon that we are all so much aware of, that has been called the bicoastal syndrome. There are 100 different names I have heard of. But there is a rather wide disparity in terms of annual pay between, let's say, New York and North Dakota. I exclude Alaska because as the lawyers would say, that is a sui generis situation. That is true also of the District of Columbia, and I will not say anything about the situation. But that, too, I think, is much different. Let's just leave it at that.

Is that going to continue, do you think, Mrs. Norwood? The numbers are pretty staggering because you are not talking about the difference between somebody that makes $400,000 and the fellow next door and his family that make $500,000. We are talking about $26,000, in that range, for New York and $15,000 for North Dakota. So that $11,000 or thereabouts, to round it off, is an enormous difference with that kind of a base. Just an incredible difference, it strikes me.

Is that accounted for because prices are lower in those parts of the country that have those kinds of low annual pay numbers, or does it reflect that those people live a lot less well off than in States with higher incomes—again, New York would be at the top of the scale at $26,000 or thereabouts, as I recall. What is happening?

Mrs. **Norwood**. It reflects several things. Clearly there are differences in price levels. We don't have consumer price indexes for every State, we don't have it for any State. We have them for some areas and regions of the country, and there are differential price movements, particularly by size of the city or area in which people live. So one aspect is that price movement differs.

What we are really seeing here is a differential location of industry, and it is industry primarily which drives earnings. If you work for an accountant or a law firm or something of that sort, there is a particular occupational pay structure. If, on the other hand, you are a farmer or you are working in a hotel, there is a different, usually much lower, pay structure.

So a large part of the difference in earnings is really related to the location of industry in this country. And that has been exacerbated by the fact that over the last couple of years the rural areas have not had tremendous prosperity and the oil and gas extraction industry has really fallen on hard times. That is a high-paying industry, but their employment has gone down, so you have fewer workers in the high-wage group in the Southwest.

I think we should be careful, however, to recognize that even in New York, New York City, New York State, you have a tremendous number of people living in poverty at the same time as you have a lot of people on Wall Street and in very large law firms making a great deal of money.

There seems to be some evidence, when you look at the family income figures, that there is beginning to be more a two-tiered system. There are lots of people who are doing very well, there are also a lot of people who are not. And that is occurring all over the country. It is hidden in the averages.

Senator **Bryan**. A real polarization that is occurring between the haves——

Mrs. **Norwood**. And the have-nots.

Senator **Bryan** [continuing]. And the have-nots.

Mrs. **Norwood**. That is particularly true when you look at the minority groups.

Senator **Bryan**. Your forecast, if you care to make one? What are we going to see in terms of pay growth in the next year ahead? The 4.9 percent number, does it look like we are going to see something in that range, or do you see any indication that it might be less or maybe more?

Mrs. **Norwood**. We have had, particularly in manufacturing industries, fairly good productivity growth. And unit labor costs have been fairly low. Obviously, wages can increase without providing pressure on inflation if you have a good productivity performance.

In services, it is more spotty. Some of our service-producing industries have very good productivity performance. Others do not. And that is something that I think we need to look at. But I think that is the key to what is going to happen to earnings.

Senator **Bryan**. Well, I very much appreciate, as I know Chairman Hamilton and the rest of the committee does, your being here today as you share with us this information.

I thank your colleagues Mr. Plewes and Mr. Dalton.

If you have anything else to add before we close the record today, I will tender the floor to you one more time.

Mrs. **Norwood**. Thank you very much. It has been a great pleasure to be here.

Senator **Bryan**. I have enjoyed it as well.

Thank you very much.

This hearing is adjourned.

[Whereupon, at 10:40 a.m., the committee adjourned, subject to the call of the Chair.]

EMPLOYMENT-UNEMPLOYMENT

FRIDAY, NOVEMBER 3, 1989

Congress of the United States,
Joint Economic Committee,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m., in room 2359, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the committee) presiding.

Present: Representative Hamilton.

Also present: Joseph J. Minarik, executive director; William Buechner, Jim Klumpner, and Chris Frenze, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative Hamilton. The Joint Economic Committee will come to order.

We are very pleased to welcome as our witness this morning the Commissioner of Labor Statistics, Janet Norwood, who is here with her colleagues to testify on the employment and unemployment situation for October.

The data that were released this morning by the Bureau of Labor Statistics reinforced the impression from other recent economic data that the American economy is continuing to grow, but at a relatively moderate pace.

Overall, the Nation's households reported little change in either employment or unemployment in October, and the unemployment rate remained at 5.3 percent of the labor force.

Employers raised the number of people on their payrolls by 233,000 in October, which was the largest monthly increase since June. The one major note of concern in today's data is that employment in manufacturing declined by 13,000 last month, the sixth monthly decline in a row.

The committee will now ask Commissioner Norwood to proceed with her analysis of the employment and unemployment figures for October.

You may proceed.

STATEMENT OF HON. JANET L. NORWOOD, COMMISSIONER, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, ACCOMPANIED BY KENNETH V. DALTON, ASSOCIATE COMMISSIONER, OFFICE OF PRICES AND LIVING CONDITIONS; AND THOMAS J. PLEWES, ASSOCIATE COMMISSIONER, OFFICE OF EMPLOYMENT AND UNEMPLOYMENT STATISTICS

Mrs. NORWOOD. Thank you very much, Mr. Chairman.

As always, I have Kenneth Dalton and Thomas Plewes with me, and we are very pleased to be here.

Employment rose in October, while the number of unemployed persons was little changed from September. The civilian unemployment rate was 5.3 percent, and the overall rate 5.2. Both rates were unchanged over the month and have shown little movement over the past year.

Nonfarm employment, as measured by our survey of business firms, rose by 235,000 in October. All of the increase took place in the service-producing sector, with local government and the services industry showing the largest gains.

Employment in local government rose by about 100,000 as school systems continued to add teachers and other personnel for the fall term. Government employment had also risen substantially in September. In contrast, job growth in the private sector has slowed recently, averaging only 110,000 over the last 4 months; this was half the growth rate that occurred during the first 6 months of the year.

Employment in the services industry rose by 85,000 in October, with health services accounting for a large part of the gain. The number of transportation jobs rose by about 25,000, as trucking, air, and water carriers all added workers. Employment in communications and public utilities changed little as the number of workers on strike at some of the regional telephone companies remained about the same in October as in September.

Employment in the goods-producing sector was essentially unchanged in October. Overall manufacturing, which had lost 90,000 jobs in September, edged down only slightly in October, but durable goods manufacturing jobs declined for the second month in a row. Employment in durable manufacturing industries is down by 155,000 since March. Auto manufacturing, electrical equipment, and fabricated metals have accounted for most of the lost jobs. In nondurables, where declines have not been so sharp, small increases occurred in October in a number of the individual industries. The factory workweek declined by three-tenths of an hour in October, in part because some workers went out on strike during the reference pay period.

In the household survey, total employment changed very little for the fourth month in a row. Labor force growth also slowed sharply in this period, and, thus, the number of unemployed persons has remained essentially stable. In fact, the civilian jobless rate and the rates for most worker groups have fluctuated without any clear trend over the past year.

Total employment in the household survey rose by 1.9 million over the past year, while the number of jobs in the business survey increased by 2.8 million. In previous appearances before this committee, we have discussed the differences in the results of the two surveys. The business survey has shown a larger growth in jobs over the past few years than has the household survey. We have suspected that an increase in dual jobholding may have been partly responsible for the divergence between the two series, since most dual jobholders appear on two or more payrolls in the business survey but are only counted once in the household survey. We now have evidence indicating that that has indeed been the case. With the demand for labor strengthening considerably in recent years, increasing numbers of workers have taken on second jobs, according to the findings from a special survey conducted in May of this year.

The survey shows that, in the 4 years since the last survey of this type was conducted, the increase in multiple jobholding accounts for nearly two-thirds of the 1.7 million difference between the two surveys. Detailed data on the number and characteristics of dual jobholders, as identified in this survey, will be available on Monday.

In summary, the unemployment rate in October was the same as in September. Employment rose over the month, particularly in the services industry and in local government. However, employment losses continued in durable manufacturing industries.

I would like to call your attention to last week's BLS release on U.S. export prices for the third quarter, which I think is quite consistent with the employment trends I have just discussed. These data suggest some reduction in the competitive position of machinery and transport equipment, and in miscellaneous manufactured products, as export prices of these products rose. Actually, in terms of foreign currencies, overall export prices have risen 7.2 percent since the beginning of the year, as the dollar appreciated.

On the import side, prices declined 1.3 percent between June and September. Roughly half of this decline was due to lower petroleum prices, but nonfuel import prices also declined, falling 0.6 percent in the third quarter and more than 1 percent since the beginning of the year. This development parallels the recent appreciation in the dollar, which makes foreign goods more competitive in our economy. In contrast, from March 1985 through December 1988, a period when the dollar's value was depreciating, nonfuel import prices jumped almost 31 percent. During this same 3½-year period, nonfuel domestic producer prices for finished goods in the United States rose just 10.5 percent.

We would be glad to try to answer any questions you have.

[The tables and charts attached to Mrs. Norwood's statement, together with the Employment Situation press release, follow:]

Unemployment rates of all civilian workers by alternative seasonal adjustment methods

Month and year	Unadjusted rate	X-11 ARIMA method							X-11 method (official method before 1980)	Range (cols. 2-9)
		Official procedure	Concurrent (as first computed)	Concurrent (revised)	Stable	Total	Residual	12-month extrapolation		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1988										
October.....	5.0	5.3	5.3	5.3	5.3	5.3	5.4	5.3	5.3	.1
November....	5.2	5.4	5.4	5.3	5.4	5.3	5.4	5.4	5.4	.1
December....	5.0	5.3	5.3	5.3	5.3	5.3	5.4	5.3	5.4	.1
1989										
January.....	6.0	5.4	5.4	5.4	5.5	5.4	5.3	5.4	5.5	.2
February....	5.6	5.1	5.2	5.2	5.2	5.2	5.0	5.1	5.2	.2
March.......	5.2	5.0	5.0	5.0	5.0	5.0	4.8	5.0	5.0	.2
April.......	5.1	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	-
May.........	5.0	5.2	5.2	5.2	5.2	5.1	5.3	5.2	5.1	.2
June........	5.5	5.3	5.3	5.3	5.2	5.4	5.4	5.3	5.3	.2
July........	5.3	5.2	5.2	5.3	5.2	5.3	5.3	5.3	5.3	.1
August......	5.1	5.2	5.2	5.2	5.1	5.2	5.3	5.2	5.2	.2
September...	5.1	5.3	5.3	5.3	5.3	5.3	5.2	5.3	5.3	.1
October.....	5.0	5.3	5.3	5.3	5.3	5.2	5.3	5.3	5.3	.1

SOURCE: U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
November 1989

(1) *Unadjusted rate*. Unemployment rate for all civilian workers, not seasonally adjusted.

(2) *Official procedure (X-11 ARIMA method)*. The published seasonally adjusted rate for all civilian workers. Each of the 3 major civilian labor force components—agricultural employment, nonagricultural employment and unemployment—for 4 age-sex groups—males and females, ages 16-19 and 20 years and over—are seasonally adjusted independently using dat from January 1974 forward. The data series for each of these 12 components are extended b a year at each end of the original series using ARIMA (Auto-Regressive, Integrated, Moving Average) models chosen specifically for each series. Each extended series is then seasona adjusted with the X-11 portion of the X-11 ARIMA program. The 4 teenage unemployment and nonagricultural employment components are adjusted with the additive adjustment model, while the other components are adjusted with the multiplicative model. The unemployment rate is computed by summing the 4 seasonally adjusted unemployment components and calculati that total as a percent of the civilian labor force total derived by summing all 12 season adjusted components. All the seasonally adjusted series are revised at the end of each ye Extrapolated factors for January-June are computed at the beginning of each year; extrapol factors for July-December are computed in the middle of the year after the June data becom available. Each set of 6-month factors are published in advance, in the January and July issues, respectively, of *Employment and Earnings*.

(3) *Concurrent (as first computed, X-11 ARIMA method)*. The official procedure for computation of the rate for all civilian workers using the 12 components is followed except that extrapolated factors are not used at all. Each component is seasonally adjust with the X-11 ARIMA program each month as the most recent data become available. Rates fo each month of the current year are shown as first computed; they are revised only once eac year, at the end of the year when data for the full year become available. For example, the rate for January 1984 would be based, during 1984, on the adjustment of data from the period January 1974 through January 1984.

(4) *Concurrent (revised, X-11 ARIMA method)*. The procedure used is identical to (3) above, and the rate for the current month (the last month displayed) will always be the same in the two columns. However, all previous months are subject to revision each month based on the seasonal adjustment of all the components with data through the current month.

(5) *Stable (X-11 ARIMA method)*. Each of the 12 civilian labor force components is extende using ARIMA models as in the official procedure and then run through the X-11 part of the program using the stable option. This option assumes that seasonal patterns are basically constant from year-to-year and computes final seasonal factors as unweighted averages of all the seasonal-irregular components for each month across the entire span of the period adjusted. As in the official procedure, factors are extrapolated in 6-month intervals and the series are revised at the end of each year. The procedure for computation of the rate from the seasonally adjusted components is also identical to the official procedure.

(6) *Total (X-11 ARIMA method)*. This is one alternative aggregation procedure, in which total unemployment and civilian labor force levels are extended with ARIMA models and directly adjusted with multiplicative adjustment models in the X-11 part of the program. The rate is computed by taking seasonally adjusted total unemployment as a percent of seasonally adjusted total civilian labor force. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(7) *Residual (X-11 ARIMA method)*. This is another alternative aggregation method, in which total civilian employment and civilian labor force levels are extended using ARIMA models and then directly adjusted with multiplicative adjustment models. The seasonally adjusted unemployment level is derived by subtracting seasonally adjusted employment from seasonally adjusted labor force. The rate is then computed by taking the derived unemployment level as a percent of the labor force level. Factors are extrapolated in 6-month intervals and the series revised at the end of each year.

(8) *12-month extrapolation (X-11 ARIMA method)*. This approach is the same as the official procedure except that the factors are extrapolated in 12-month intervals. The factors for January-December of the current year are computed at the beginning of the year based on dat through the preceding year. The values for January through June of the current year are th same as the official values since they reflect the same factors.

(9) *X-11 method (official method before 1980)*. The method for computation of the official procedure is used except that the series are not extended with ARIMA models and the factors are projected in 12-month intervals. The standard X-11 program is used to perform the seasonal adjustment.

Methods of Adjustment: The X-11 ARIMA method was developed at Statistics Canada by the Seasonal Adjustment and Times Series Staff under the direction of Estela Bee Dagum. The method is described in *The X-11 ARIMA Seasonal Adjustment Method*, by Estela Bee Dagum, Statistics Canada Catalogue No. 12-564E, February 1980.

The standard X-11 method is described in *X-11 Variant of the Census Method II Seasonal Adjustment Program*, by Julius Shiskin, Allan Young and John Musgrave (Technical Paper No. 15, Bureau of the Census, 1967).

Table 1 Change from trough for selected labor force indicators, seasonally adjusted, 83 months from trough

	Nov. 1982-Oct., 1989
Civilian labor force, total	13,055
Adult men	5,493
Adult women	8,099
Teenagers	-537
Blacks	1,988
Whites	9,877
Civilian employment total	18,433
Adult men	8,444
Adult women	9,656
Teenagers	332
Blacks	2,728
Whites	14,415
Unemployment total	-5,377
Adult men	-2,951
Adult women	-1,557
Teenagers	-869
Blacks	-740
Whites	-4,538

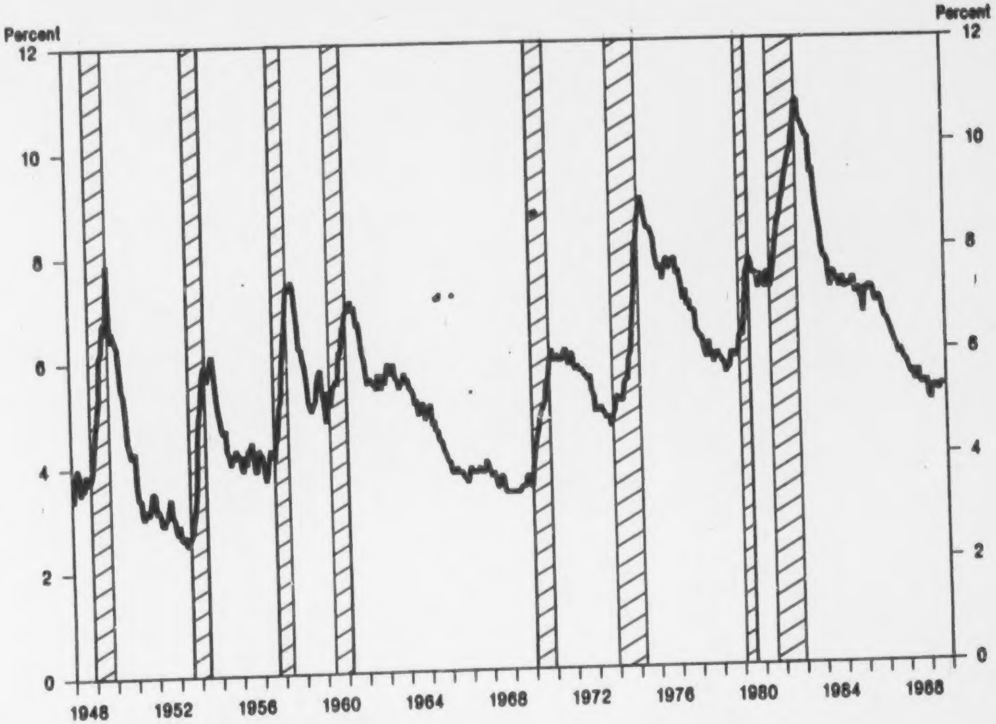
Table 2 Percent change from trough for selected labor force indicators, seasonally adjusted
83 months from trough

	Nov. 1982- Oct., 1989
Civilian labor force, total	11.8
Adult men	9.4
Adult women	18.3
Teenagers	-6.3
Blacks	17.3
Whites	10.2
Civilian employment total	18.6
Adult men	16.1
Adult women	24.1
Teenagers	5.1
Blacks	29.7
Whites	16.5
Unemployment total	-45.0
Adult men	-50.4
Adult women	-38.6
Teenagers	-42.3
Blacks	-31.8
Whites	-49.0

Table 3 Change from trough for selected rates, seasonally adjusted
83 months from trough

	Nov. 1982- Oct., 1989
Participation rate, total	2.2
Adult men	-.8
Adult women	4.6
Teenagers	1.9
Black and other	2.7
Black	2.5
White	2.2
Employment-population ratio, total	5.6
Adult men	3.6
Adult women	6.7
Teenagers	6.7
Black and other	7.6
Black	7.4
White	5.5
Unemployment rate, total	-5.5
Adult men	-5.5
Adult women	-4.4
Teenagers	-9.2
Black and other	-8.4
Black	-8.4
White	-5.2

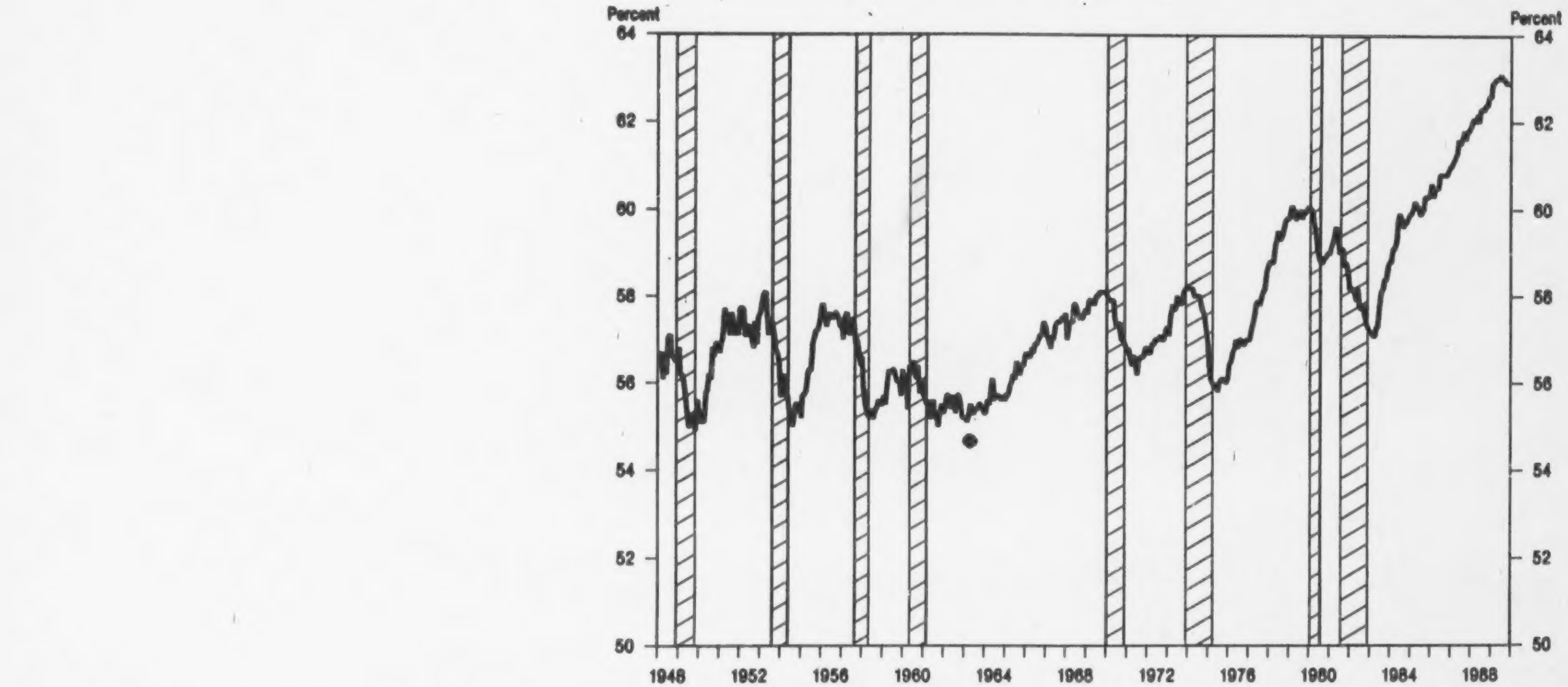
Chart 1. Unemployment rate of all civilian workers, seasonally adjusted, 1948–89



Note: Shaded areas represent recessions

Source: Bureau of Labor Statistics, November 3, 1989

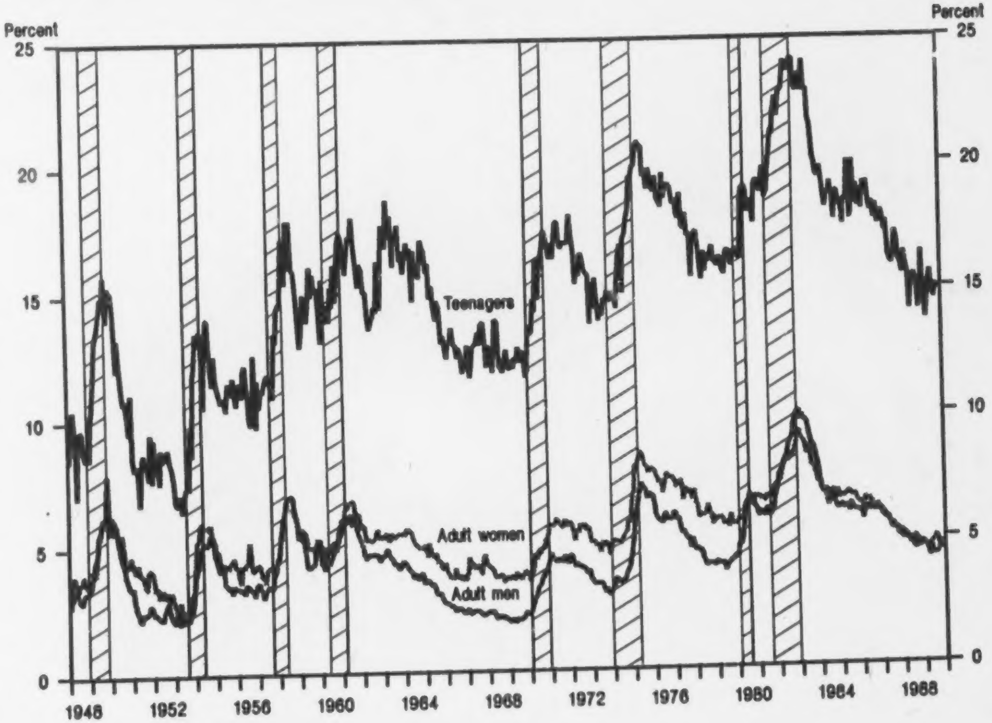
Chart 2. Civilian employment–population ratio, seasonally adjusted, 1948–89



Note: Shaded areas represent recessions

Source: Bureau of Labor Statistics, November 3, 1989

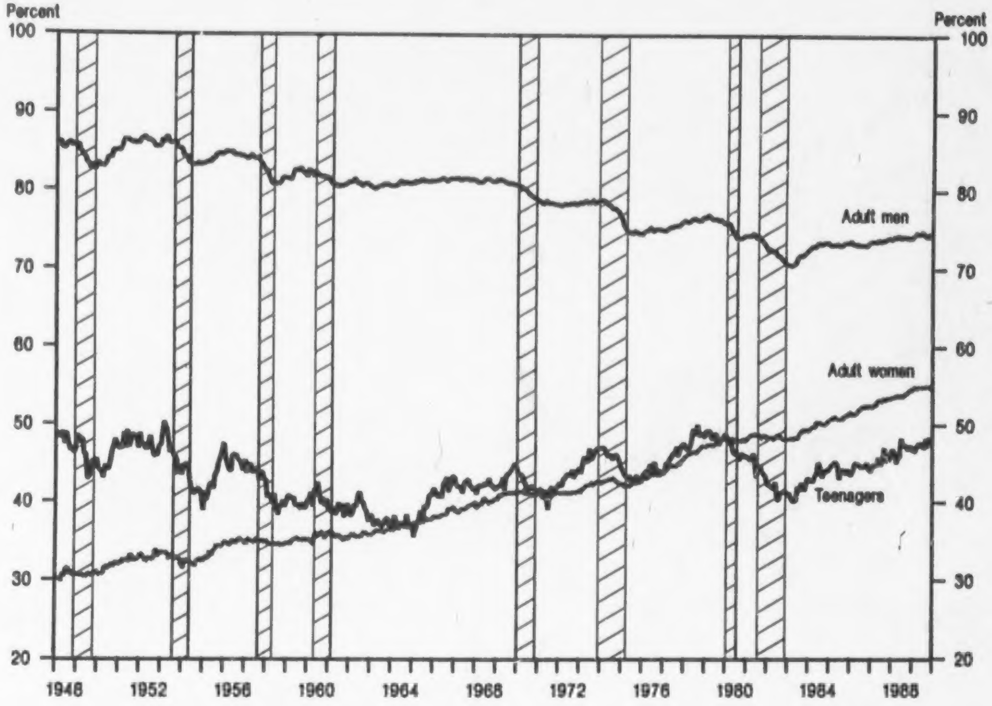
Chart 3. Unemployment rates for major age-sex groups, seasonally adjusted, 1948-89



Note: Shaded areas represent recessions

Source: Bureau of Labor Statistics, November 3, 1989

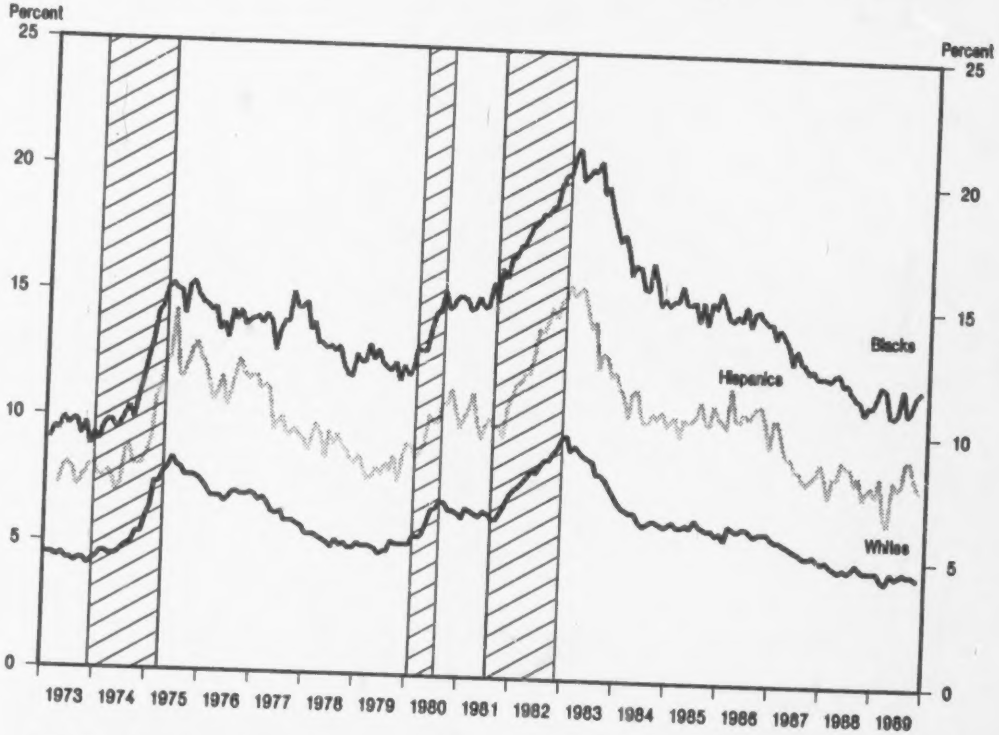
Chart 4. Civilian employment-population ratio for major age-sex groups, seasonally adjusted, 1948-89



Note: Shaded areas represent recessions

Source: Bureau of Labor Statistics, November 3, 1989

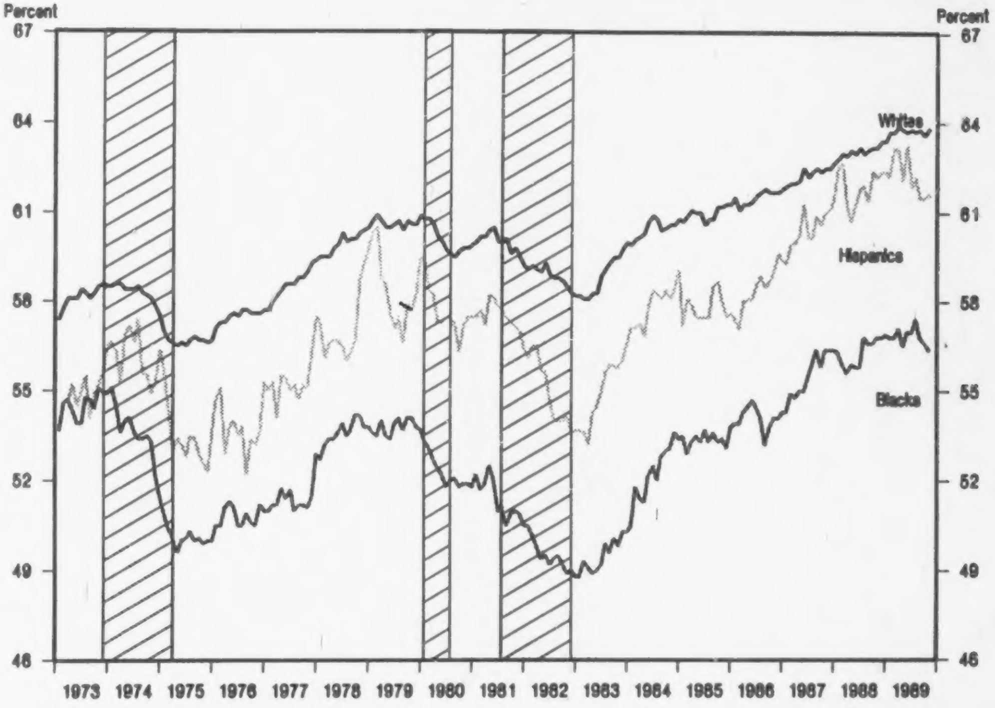
Chart 5. Unemployment rates for whites, blacks, and persons of Hispanic origin, seasonally adjusted, 1973-89



Note: Shaded areas represent recessions

Source: Bureau of Labor Statistics, November 3, 1989

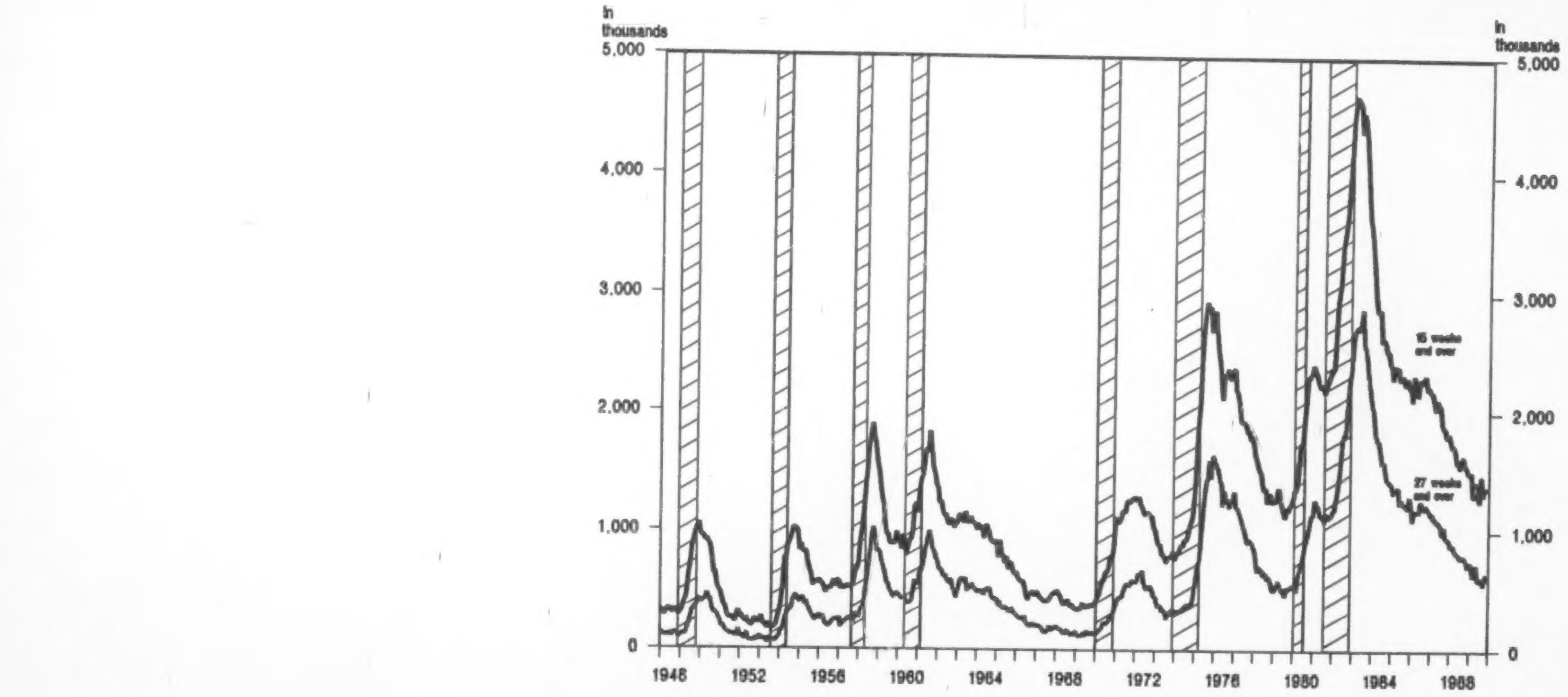
Chart 6. Civilian employment-population ratio for whites, blacks, and persons of Hispanic origin, seasonally adjusted, 1973-89



Note: Shaded areas represent recessions

Source: Bureau of Labor Statistics, November 3, 1989

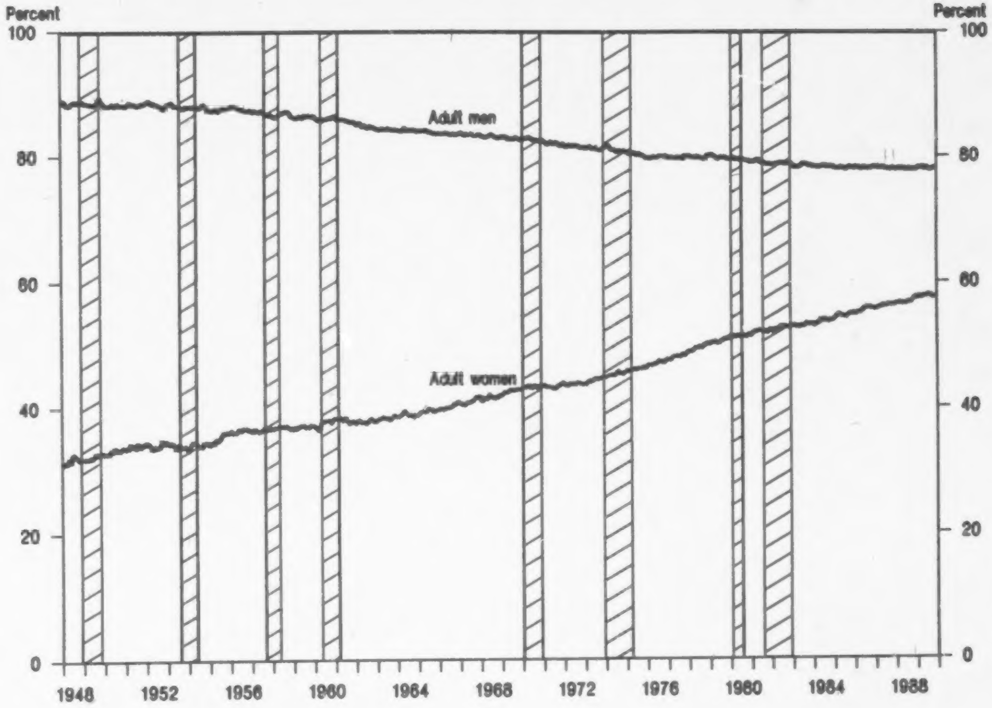
Chart 7. Long-term unemployment, seasonally adjusted, 1948-89



Note: Shaded areas represent recessions

Source: Bureau of Labor Statistics, November 3, 1989

Chart 8. Labor force participation rates for adult men and women, seasonally adjusted, 1948-89



Note: Shaded areas represent recessions

Source: Bureau of Labor Statistics, November 3, 1989

CURRENT POPULATION SURVEY MONTHLY REGIONAL DATA (numbers in thousands)

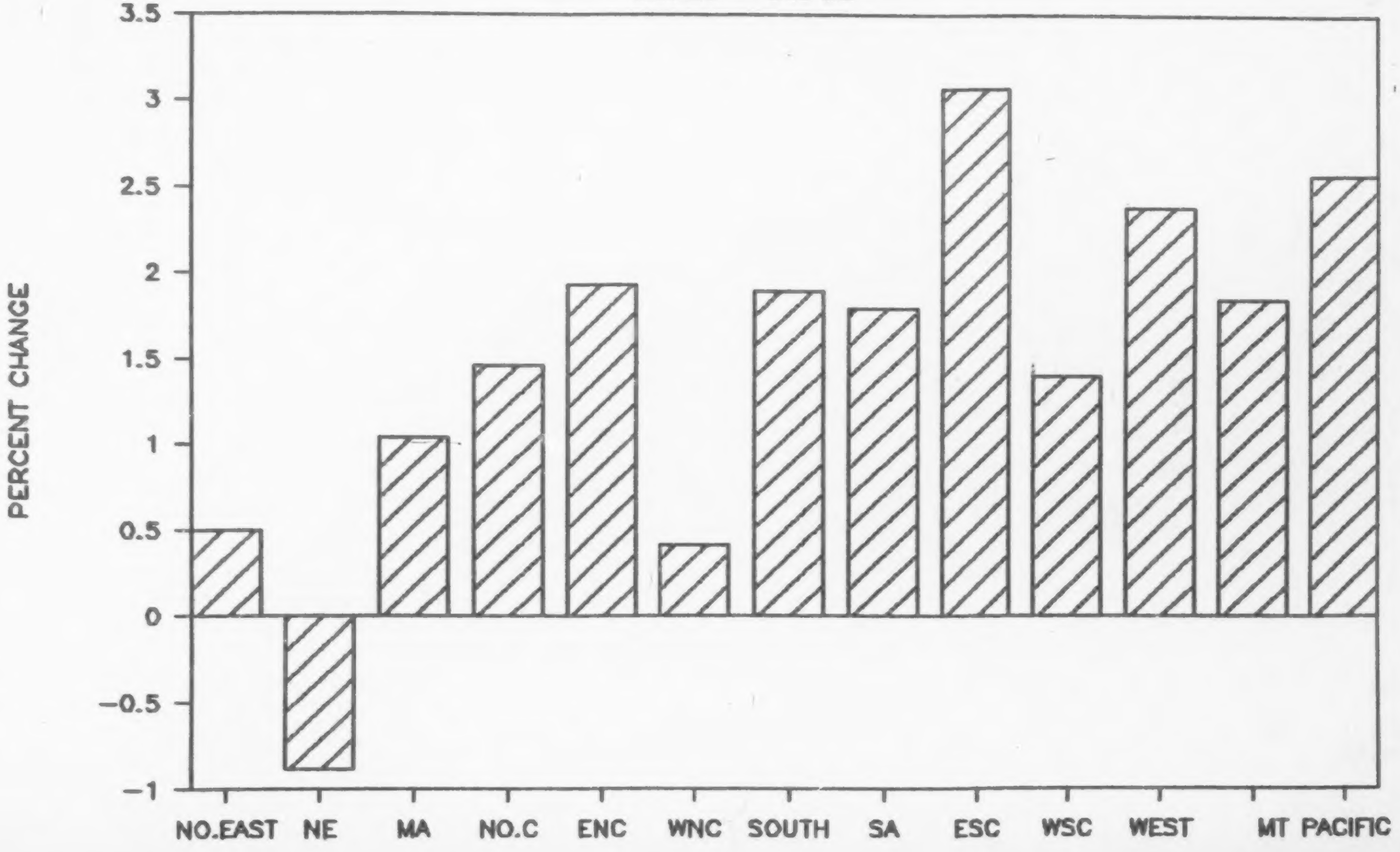
not seasonally adjusted

REGION	NO.EAST	NE	MA	NO.C	ENC	WNC	SOUTH	SA	ESC	WSC	WEST	MT	PACIFIC
Oct 88													
CIVILIAN LF	25232	6953	18278	30480	21211	9268	41588	21444	7191	12952	25226	6628	18598
EMPLOYMENT	24245	6758	17486	28950	20063	8887	39187	20432	6720	12036	23956	6242	17714
UNEMPLOYMENT	987	195	792	1530	1148	381	2401	1012	471	916	1270	386	884
U RATE	3.9	2.8	4.3	5.0	5.4	4.1	5.8	4.7	6.5	7.1	5.0	5.8	4.8
Oct 89													
CIVILIAN LF	25507	6988	18520	31019	21729	9291	42145	21893	7329	12923	25744	6673	19071
EMPLOYMENT	24366	6698	17668	29374	20450	8924	39929	20798	6926	12204	24525	6357	18168
UNEMPLOYMENT	1142	290	852	1645	1279	366	2217	1095	403	718	1219	316	902
U RATE	4.5	4.1	4.6	5.3	5.9	3.9	5.3	5.0	5.5	5.6	4.7	4.7	4.7
Oct 89 - Oct 88													
% CHANGE													
CIVILIAN LF	1.1	0.5	1.3	1.8	2.4	0.2	1.3	2.1	1.9	-0.2	2.1	0.7	2.5
EMPLOYMENT	0.5	-0.9	1.0	1.5	1.9	0.4	1.9	1.8	3.1	1.4	2.4	1.8	2.6
UNEMPLOYMENT	15.7	48.7	7.6	7.5	11.4	-3.9	-7.7	8.2	-14.4	-21.6	-4.0	-18.1	2.0
abs change U RATE	0.6	1.3	0.3	0.3	0.5	-0.2	-0.5	0.3	-1.0	-1.5	-0.3	-1.1	-0.1

The Census regions and divisions and the States of which they are comprised:

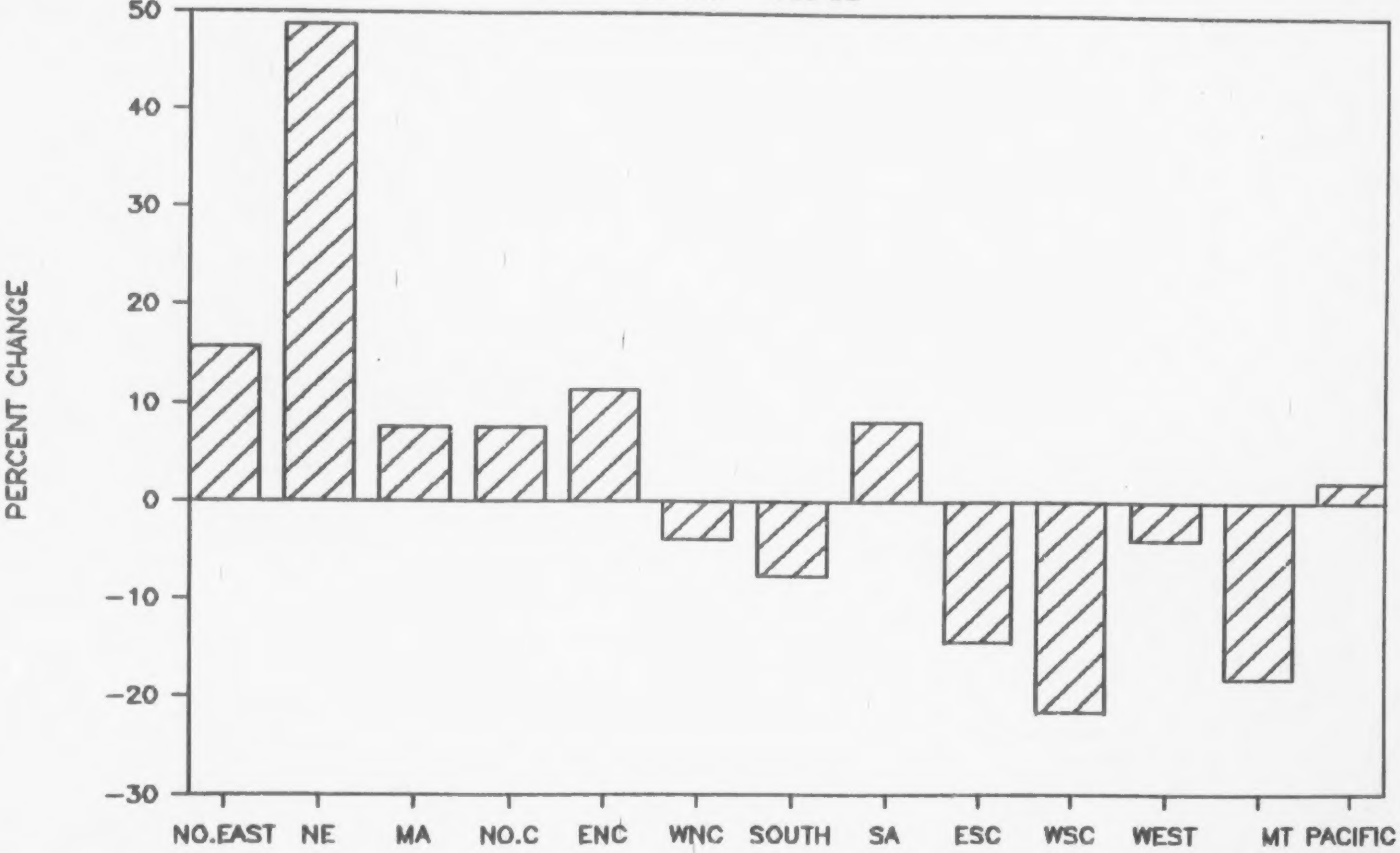
- Northeast
  - New England
    - Maine
    - New Hampshire
    - Vermont
    - Massachusetts
    - Rhode Island
    - Connecticut
  - Middle Atlantic
    - New York
    - New Jersey
    - Pennsylvania
- Midwest
  - East North Central
    - Ohio
    - Indiana
    - Illinois
    - Michigan
    - Wisconsin
  - West North Central
    - Iowa
    - Missouri
    - Nebraska
    - Kansas
    - Minnesota
    - North Dakota
    - South Dakota
- South
  - South Atlantic
    - Delaware
    - District of Columbia
    - Maryland
    - Virginia
    - West Virginia
    - North Carolina
    - South Carolina
    - Georgia
    - Florida
  - East South Central
    - Kentucky
    - Tennessee
    - Alabama
    - Mississippi
  - West South Central
    - Arkansas
    - Louisiana
    - Oklahoma
    - Texas
- West
  - Mountain
    - Montana
    - Wyoming
    - Colorado
    - Utah
    - Idaho
    - Arizona
    - Nevada
    - New Mexico
  - Pacific
    - California
    - Hawaii
    - Washington
    - Oregon
    - Alaska

Note: Monthly regional data from the Current Population Series are not published by the Bureau of Labor Statistics. These data are not the sums of offical Local Area Unemployment Statistics data for the component States, which are calculated by a different methodology. Therefore, the monthly LAUS State series is different from the monthly CPS Region series.



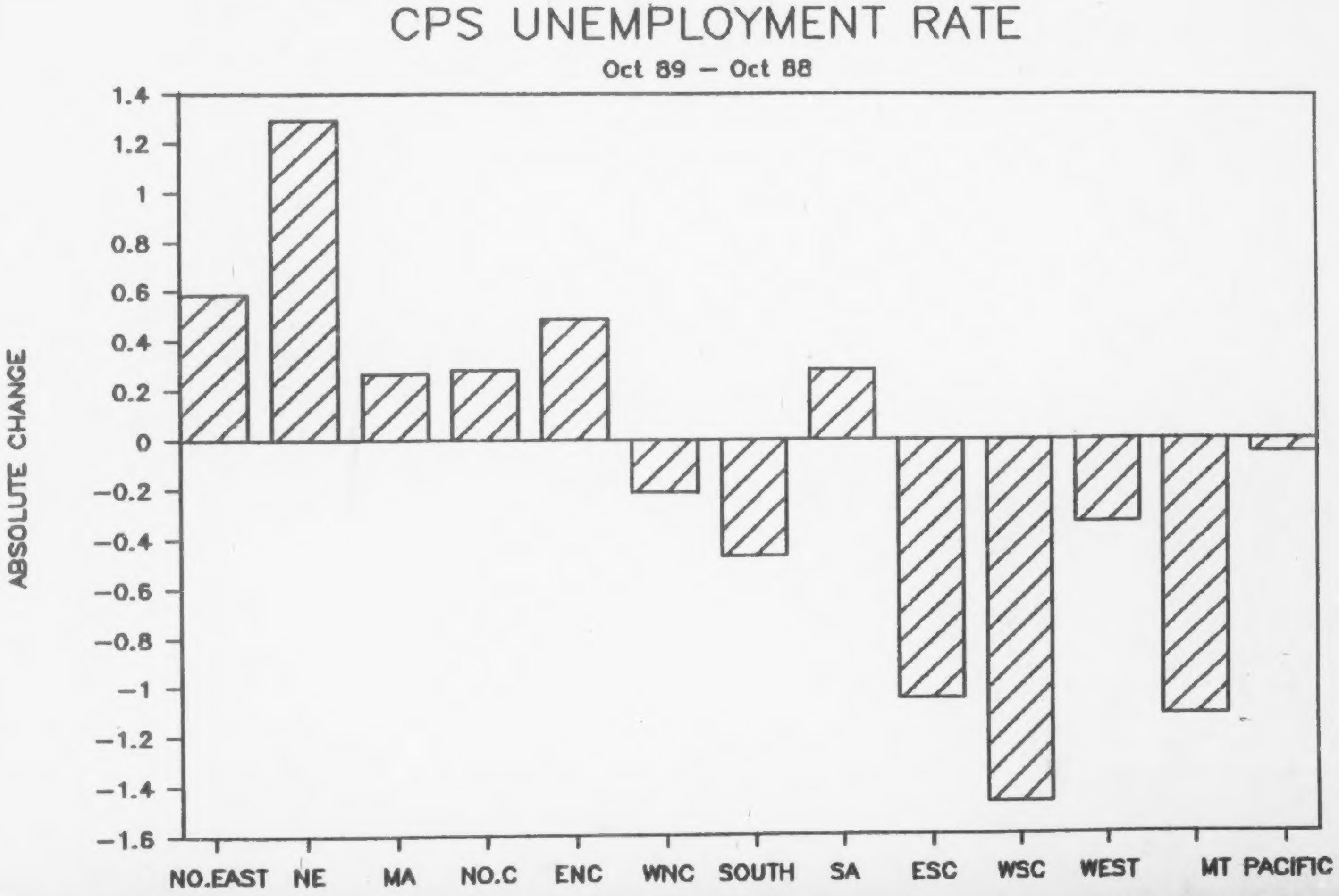
CPS EMPLOYMENT

Oct 89 – Oct 88



CPS UNEMPLOYMENT

Oct 89 – Oct 88


CPS UNEMPLOYMENT RATE
Oct 89 – Oct 88
ABSOLUTE CHANGE
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1.2
−1.4
−1.6
NO.EAST
NE
MA
NO.C
ENC
WNC
SOUTH
SA
ESC
WSC
WEST
MT
PACIFIC

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THE EMPLOYMENT SITUATION: OCTOBER 1989

Nonfarm payroll employment rose moderately in October and unemployment was unchanged, the Bureau of Labor Statistics of the U. S. Department of Labor reported today. The overall jobless rate remained at 5.2 percent, and the civilian worker rate remained at 5.3 percent.

The number of employees on nonagricultural payrolls, as measured by the survey of business establishments, rose by 235,000, with most of the growth occurring in government and services. Total civilian employment, as measured by the survey of households, was essentially unchanged.

Unemployment (Household Survey Data)

The number of unemployed persons, at 6.6 million, and the civilian worker unemployment rate, 5.3 percent, were unchanged in October. Both measures have shown little movement since September 1988. The unemployment rate for adult men edged down to 4.5 percent in October, and that for adult women edged up to 4.7 percent, returning both rates to about their August values. Jobless rates were essentially unchanged for teenagers (14.9 percent), whites (4.4 percent), blacks (11.8 percent), and Hispanics (7.9 percent). (See tables A-2 and A-3.)

Civilian Employment and the Labor Force (Household Survey Data)

Total civilian employment was about unchanged in October, at a seasonally adjusted level of 117.5 million. Although employment has changed little since June, it is about 2 million higher than a year earlier. The employment-population ratio, at 62.9 percent in October, has also changed little over the past several months, but is well above last October's 62.4 percent. (See table A-2.)

The seasonally adjusted civilian labor force was unchanged in October, at 124.1 million, and has shown no growth since June. The civilian labor force participation rate, 66.4 percent, remained at the September level. (See table A-2.)

Industry Payroll Employment (Establishment Survey Data)

Total nonagricultural payroll employment increased by 235,000 in October to 109.3 million, seasonally adjusted. Employment growth continued in the service-producing sector, while the number of goods-producing jobs was unchanged over the month, following a sharp decline in September. (See table B-1.)

Table A. Major indicators of labor market activity, seasonally adjusted

Category	Quarterly averages		Monthly data			Sept.-Oct. change
	1989		1989			
	II	III	Aug.	Sept.	Oct.	
HOUSEHOLD DATA	Thousands of persons					
Labor force 1/	125,464	125,690	125,706	125,742	125,814	72
Total employment 1/	118,964	119,189	119,285	119,158	119,254	96
Civilian labor force	123,790	124,005	124,018	124,040	124,105	65
Civilian employment	117,289	117,504	117,597	117,456	117,545	89
Unemployment	6,501	6,501	6,421	6,584	6,561	-23
Not in labor force	62,388	62,597	62,580	62,686	62,766	80
Discouraged workers	869	815	N.A.	N.A.	N.A.	N.A.
	Percent of labor force					
Unemployment rates:						
All workers 1/	5.2	5.2	5.1	5.2	5.2	.0
All civilian workers	5.3	5.2	5.2	5.3	5.3	.0
Adult men	4.4	4.5	4.4	4.8	4.5	-0.3
Adult women	4.8	4.7	4.7	4.5	4.7	.2
Teenagers	15.1	14.8	14.5	15.1	14.9	-.2
White	4.5	4.5	4.5	4.5	4.4	-.1
Black	11.2	11.2	11.1	11.6	11.8	.2
Hispanic origin	8.1	8.8	9.0	8.3	7.9	-.4
ESTABLISHMENT DATA	Thousands of jobs					
Nonfarm employment	108,339	p108,914	108,887	p109,088	p109,321	p233
Goods-producing	25,664	p25,657	25,694	p25,607	p25,604	p-3
Service-producing	82,676	p83,257	83,193	p83,481	p83,717	p236
	Hours of work					
Average weekly hours:						
Total private	34.7	p34.7	34.6	p34.7	p34.8	p0.1
Manufacturing	41.1	p41.0	41.0	p41.1	p40.8	p-.3
Overtime	3.8	p3.8	3.8	p3.8	p3.8	p.0

1/ Includes the resident Armed Forces. p=preliminary.
N.A.=not available.

Within the goods sector, factory employment was little changed in October at 19.5 million, after falling sharply in the prior month. However, employment in durable goods continued to decline. This was led by a drop of 15,000 jobs in the auto industry; since January, employment in that industry has decreased by 50,000. Employment in fabricated metal products and electrical equipment also continued to trend downward. An over-the-month decline in the machinery industry primarily reflected a strike. In contrast, there were small over-the-month employment gains in several nondurable goods industries. Jobs in the oil and gas extraction component of the mining industry continued to edge up, while the number of construction jobs was about unchanged.

In the service-producing sector, the largest over-the-month gain occurred in local government (95,000), primarily in local education. Another major component of the overall increase was the services industry itself, where employment rose by 85,000, partly reflecting continued strong gains in health services. Employment in the transportation industry rose by 25,000 in October, while the number of wholesale and retail trade jobs was little changed over the month.

Weekly Hours (Establishment Survey Data)

The average workweek for production or nonsupervisory workers on private nonagricultural payrolls edged up by 0.1 hour in October to 34.8 hours, seasonally adjusted. However, the manufacturing workweek, at 40.8 hours, was down 0.3 hour; this was due in part to declines in the aircraft industry, where a strike affected hours at work but not the employment counts (because the strike started after the pay period began). Factory overtime was unchanged at 3.8 hours. (See table B-2.)

The index of aggregate weekly hours of production or nonsupervisory workers on private nonagricultural payrolls increased by 0.5 percent to 129.4 (1977=100), after seasonal adjustment. The index for manufacturing fell 0.6 percent to 95.3. (See table B-5.)

Hourly and Weekly Earnings (Establishment Survey Data)

Average hourly earnings of private nonagricultural production or nonsupervisory workers increased 0.7 percent in October, seasonally adjusted, while average weekly earnings rose by 1 percent. Prior to seasonal adjustment, average hourly earnings increased by 6 cents to $9.83 and average weekly earnings, at $343.07, were up $3.07. Over the year, both average hourly and weekly earnings increased 4 percent. (See tables B-3 and B-4.)

The Employment Situation for November 1989 will be released on Friday, December 8, at 8:30 A.M. (EST).

Explanatory Note

This news release presents statistics from two major surveys, the Current Population Survey (household survey) and the Current Employment Statistics Survey (establishment survey). The household survey provides the information on the labor force, total employment, and unemployment that appears in the A tables, marked HOUSEHOLD DATA. It is a sample survey of about 55,800 households that is conducted by the Bureau of the Census with most of the findings analyzed and published by the Bureau of Labor Statistics (BLS).

The establishment survey provides the information on the employment, hours, and earnings of workers on nonagricultural payrolls that appears in the B tables, marked ESTABLISHMENT DATA. This information is collected from payroll records by BLS in cooperation with State agencies. The sample includes over 300,000 establishments employing over 38 million people.

For both surveys, the data for a given month are actually collected for and relate to a particular week. In the household survey, unless otherwise indicated, it is the calendar week that contains the 12th day of the month, which is called the survey week. In the establishment survey, the reference week is the pay period including the 12th, which may or may not correspond directly to the calendar week.

The data in this release are affected by a number of technical factors, including definitions, survey differences, seasonal adjustments, and the inevitable variance in results between a survey of a sample and a census of the entire population. Each of these factors is explained below.

Coverage, definitions, and differences between surveys

The sample households in the household survey are selected so as to reflect the entire civilian noninstitutional population 16 years of age and older. Each person in a household is classified as employed, unemployed, or not in the labor force. Those who hold more than one job are classified according to the job at which they worked the most hours.

People are classified as *employed* if they did any work at all as paid civilians; worked in their own business or profession or on their own farm; or worked 15 hours or more in an enterprise operated by a member of their family, whether they were paid or not. People are also counted as employed if they were on unpaid leave because of illness, bad weather, disputes between labor and management, or personal reasons. Members of the Armed Forces stationed in the United States are also included in the employed total.

People are classified as *unemployed*, regardless of their eligibility for unemployment benefits or public assistance, if they meet all of the following criteria: They had no employment during the survey week; they were available for work at that time; and they made specific efforts to find employment sometime during the prior 4 weeks. Persons laid off from their former jobs and awaiting recall and those expecting to report to a job within 30 days need not be looking for work to be counted as unemployed.

The *labor force* equals the sum of the number employed and the number unemployed. The *unemployment rate* is the percentage of unemployed people in the labor force (civilian plus the resident Armed Forces). Table A-5 presents a special grouping of seven measures of unemployment based on varying definitions of unemployment and the labor force. The definitions are provided in the table. The most restrictive definition yields U-1 and the most comprehensive yields U-7. The overall unemployment rate is U-5a, while U-5b represents the same measure with a civilian labor force base.

Unlike the household survey, the establishment survey only counts wage and salary employees whose names appear on the payroll records of nonagricultural firms. As a result, there are many differences between the two surveys, among which are the following:

— The household survey, although based on a smaller sample, reflects a larger segment of the population; the establishment survey excludes agriculture, the self-employed, unpaid family workers, private household workers, and members of the resident Armed Forces;

— The household survey includes people on unpaid leave among the employed; the establishment survey does not;

— The household survey is limited to those 16 years of age and older; the establishment survey is not limited by age;

— The household survey has no duplication of individuals, because each individual is counted only once; in the establishment survey, employees working at more than one job or otherwise appearing on more than one payroll would be counted separately for each appearance.

Other differences between the two surveys are described in "Comparing Employment Estimates from Household and Payroll Surveys," which may be obtained from the BLS upon request.

Seasonal adjustment

Over the course of a year, the size of the Nation's labor force and the levels of employment and unemployment undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays, and the opening and closing of schools. For example, the labor force increases by a large number each June, when schools close and many young people enter the job market. The effect of such seasonal variation can be very large; over the course of a year, for example, seasonality may account for as much as 95 percent of the month-to-month changes in unemployment.

Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month to month. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot. To return to the school's-out example, the large number of people entering the labor force each June is likely to obscure any other changes that have taken place since May, making it difficult to determine if the level of economic activity has risen or declined. However, because the effect of students finishing school in previous years is known, the statistics for the current year can be adjusted to allow for a comparable change. Insofar as the seasonal adjustment is made correctly, the adjusted figure provides a more useful tool with which to analyze changes in economic activity.

Measures of labor force, employment, and unemployment contain components such as age and sex. Statistics for all employees, production workers, average weekly hours, and average hourly earnings include components based on the employer's industry. All these statistics can be seasonally adjusted either by adjusting the total or by adjusting each of the components and combining them. The second procedure usually yields more accurate information and is therefore followed by BLS. For example, the seasonally adjusted figure for the labor force is the sum of eight seasonally adjusted civilian employment components, plus the resident Armed Forces total (not adjusted for seasonality), and four seasonally adjusted unemployment components; the total for unemployment is the sum of the four unemployment components; and the overall unemployment rate is derived by dividing the resulting estimate of total unemployment by the estimate of the labor force.

The numerical factors used to make the seasonal adjustments are recalculated regularly. For the household survey, the factors are calculated for the January-June period and again for the July-December period. For the establishment survey, updated factors for seasonal adjustment are calculated for 6 months, along with the introduction of new benchmarks, which are discussed at the end of the next section, and again with the release of data for October. In both surveys, revisions to data published over the previous 5 years are made once a year.

Sampling variability

Statistics based on the household and establishment surveys are subject to sampling error, that is, the estimate of the number of people employed and the other estimates drawn from these surveys probably differ from the figures that would be obtained from a complete census, even if the same questionnaires and procedures were used. In the household survey, the amount of the differences can be expressed in terms of standard errors. The numerical value of a standard error depends upon the size of the sample, the results of the survey, and other factors. However, the numerical value is always such that the chances are approximately 68 out of 100 that an estimate based on the sample will differ by no more than the standard error from the results of a complete census. The chances are approximately 90 out of 100 that an estimate based on the sample will differ by no more than 1.6 times the standard error from the results of a complete census. At approximately the 90-percent level of confidence—the confidence limits used by BLS in its analyses—the error for the monthly change in total employment is on the order of plus or minus 358,000; for total unemployment it is 224,000; and, for the overall unemployment rate, it is 0.19 percentage point. These figures do not mean that the sample results are off by these magnitudes but, rather, that the chances are approximately 90 out of 100 that the "true" level or rate would not be expected to differ from the estimates by more than these amounts.

Sampling errors for monthly surveys are reduced when the data are cumulated for several months, such as quarterly or annually. Also, as a general rule, the smaller the estimate, the larger the sampling error. Therefore, relatively speaking, the estimate of the size of the labor force is subject to less error than is the estimate of the number unemployed. And, among the unemployed, the sampling error for the jobless rate of adult men, for example, is much smaller than is the error for the jobless rate of teenagers. Specifically, the error on monthly change in the jobless rate for men is .25 percentage point; for teenagers, it is 1.29 percentage points.

In the establishment survey, estimates for the 2 most current months are based on incomplete returns; for this reason, these estimates are labeled preliminary in the tables. When all the returns in the sample have been received, the estimates are revised. In other words, data for the month of September are published in preliminary form in October and November and in final form in December. To remove errors that build up over time, a comprehensive count of the employed is conducted each year. The results of this survey are used to establish new benchmarks—comprehensive counts of employment—against which month-to-month changes can be measured. The new benchmarks also incorporate changes in the classification of industries and allow for the formation of new establishments.

Additional statistics and other information

In order to provide a broad view of the Nation's employment situation, BLS regularly publishes a wide variety of data in this news release. More comprehensive statistics are contained in *Employment and Earnings*, published each month by BLS. It is available for $8.50 per issue or $25.00 per year from the U.S. Government Printing Office, Washington, D.C., 20204. A check or money order made out to the Superintendent of Documents must accompany all orders.

Employment and Earnings also provides approximations of the standard errors for the household survey data published in this release. For unemployment and other labor force categories, the standard errors appear in tables B through J of its "Explanatory Notes." Measures of the reliability of the data drawn from the establishment survey and the actual amounts of revision due to benchmark adjustments are provided in tables M, O, P, and Q of that publication.

HOUSEHOLD DATA

Table A-1. Employment status of the population, including Armed Forces in the United States, by sex

(Numbers in thousands)

Employment status and sex	Not seasonally adjusted			Seasonally adjusted[1]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
TOTAL									
Noninstitutional population[2]	186,801	188,428	188,580	186,801	187,995	188,149	188,286	188,428	188,580
Labor force[2]	124,119	125,530	126,125	123,778	125,768	125,622	125,706	125,742	125,814
Participation rate[3]	66.4	66.6	66.9	66.3	66.9	66.8	66.8	66.7	66.7
Total employed[2]	117,937	119,200	119,903	117,260	119,207	119,125	119,285	119,158	119,254
Employment-population ratio[4]	63.1	63.3	63.6	62.8	63.4	63.3	63.4	63.2	63.2
Resident Armed Forces	1,687	1,702	1,709	1,687	1,666	1,666	1,688	1,702	1,709
Civilian employed	116,250	117,498	118,194	115,573	117,541	117,459	117,597	117,456	117,545
Agriculture	3,316	3,329	3,309	3,238	3,096	3,219	3,307	3,257	3,217
Nonagricultural industries	112,934	114,169	114,885	112,335	114,445	114,240	114,290	114,199	114,327
Unemployed	6,182	6,330	6,222	6,518	6,561	6,497	6,421	6,584	6,561
Unemployment rate[5]	5.0	5.0	4.9	5.3	5.2	5.2	5.1	5.2	5.2
Not in labor force	62,682	62,899	62,455	63,023	62,228	62,527	62,580	62,686	62,766
Men, 16 years and over									
Noninstitutional population[2]	89,637	90,456	90,535	89,637	90,237	90,315	90,384	90,456	90,535
Labor force[2]	68,451	69,123	69,461	68,569	69,507	69,245	69,337	69,272	69,606
Participation rate[3]	76.4	76.4	76.7	76.5	77.0	76.7	76.7	76.6	76.9
Total employed[2]	65,184	65,875	66,217	64,976	66,110	65,961	65,934	65,601	66,030
Employment-population ratio[4]	72.7	72.8	73.1	72.5	73.3	73.0	72.9	72.5	72.9
Resident Armed Forces	1,526	1,531	1,533	1,526	1,501	1,499	1,519	1,531	1,533
Civilian employed	63,658	64,344	64,684	63,450	64,609	64,462	64,415	64,070	64,497
Unemployed	3,267	3,248	3,243	3,593	3,397	3,284	3,403	3,672	3,576
Unemployment rate[5]	4.8	4.7	4.7	5.2	4.9	4.7	4.9	5.3	5.1
Women, 16 years and over									
Noninstitutional population[2]	97,164	97,972	98,045	97,164	97,758	97,834	97,902	97,972	98,045
Labor force[2]	55,668	56,407	56,664	55,209	56,261	56,377	56,370	56,470	56,208
Participation rate[3]	57.3	57.6	57.8	56.8	57.6	57.6	57.6	57.6	57.3
Total employed[2]	52,753	53,325	53,685	52,284	53,097	53,164	53,352	53,557	53,224
Employment-population ratio[4]	54.3	54.4	54.8	53.8	54.3	54.3	54.5	54.7	54.3
Resident Armed Forces	161	171	176	161	165	167	169	171	176
Civilian employed	52,592	53,154	53,509	52,123	52,932	52,997	53,183	53,386	53,048
Unemployed	2,915	3,081	2,979	2,925	3,164	3,213	3,018	2,912	2,985
Unemployment rate[5]	5.2	5.5	5.3	5.3	5.6	5.7	5.4	5.2	5.3

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[1] The population and Armed Forces figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Includes members of the Armed Forces stationed in the United States.

[3] Labor force as a percent of the noninstitutional population.

[4] Total employment as a percent of the noninstitutional population.

[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

Table A-2. Employment status of the civilian population by sex and age

(Numbers in thousands)

Employment status, sex, and age	Not seasonally adjusted			Seasonally adjusted[1]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
TOTAL									
Civilian noninstitutional population	185,114	186,726	186,871	185,114	186,329	186,483	186,596	186,726	186,871
Civilian labor force	122,432	123,826	124,416	122,091	124,102	123,956	124,018	124,040	124,106
Participation rate	66.1	66.3	66.6	66.0	66.6	66.5	66.5	66.4	66.4
Employed	116,250	117,496	118,194	115,573	117,541	117,459	117,587	117,456	117,545
Employment-population ratio[2]	62.8	62.9	63.2	62.4	63.1	63.0	63.0	62.9	62.9
Unemployed	6,182	6,330	6,222	6,518	6,561	6,497	6,421	6,584	6,561
Unemployment rate	5.0	5.1	5.0	5.3	5.3	5.2	5.2	5.3	5.3
Men, 20 years and over									
Civilian noninstitutional population	80,851	81,790	81,905	80,851	81,592	81,679	81,754	81,790	81,905
Civilian labor force	63,023	63,771	63,973	62,915	63,831	63,656	63,643	63,721	63,883
Participation rate	78.0	78.0	78.1	77.8	78.2	77.9	77.8	77.9	78.0
Employed	60,405	61,113	61,367	60,004	61,093	60,921	60,853	60,683	60,981
Employment-population ratio[2]	74.7	74.7	74.9	74.2	74.9	74.6	74.4	74.2	74.5
Agriculture	2,400	2,419	2,401	2,315	2,256	2,342	2,364	2,339	2,309
Nonagricultural industries	58,005	58,694	58,966	57,689	58,837	58,579	58,489	58,344	58,673
Unemployed	2,618	2,658	2,606	2,911	2,737	2,734	2,790	3,038	2,902
Unemployment rate	4.2	4.2	4.1	4.6	4.3	4.3	4.4	4.8	4.5
Women, 20 years and over									
Civilian noninstitutional population	89,807	90,771	90,860	89,807	90,526	90,607	90,684	90,771	90,860
Civilian labor force	51,809	52,558	52,839	51,201	52,231	52,463	52,373	52,443	52,239
Participation rate	57.7	57.9	58.2	57.0	57.7	57.9	57.8	57.8	57.5
Employed	49,379	50,040	50,345	48,788	49,661	49,850	49,905	50,089	49,767
Employment-population ratio[2]	55.0	55.1	55.4	54.3	54.9	55.0	55.0	55.2	54.8
Agriculture	678	701	686	640	610	627	644	701	648
Nonagricultural industries	48,701	49,339	49,659	48,148	49,051	49,223	49,261	49,388	49,119
Unemployed	2,430	2,518	2,494	2,413	2,570	2,613	2,468	2,353	2,472
Unemployment rate	4.7	4.8	4.7	4.7	4.9	5.0	4.7	4.5	4.7
Both sexes, 16 to 19 years									
Civilian noninstitutional population	14,456	14,166	14,107	14,456	14,211	14,196	14,160	14,166	14,107
Civilian labor force	7,599	7,498	7,603	7,975	8,040	7,837	8,003	7,876	7,983
Participation rate	52.6	52.9	53.9	55.2	56.6	55.2	56.5	55.6	56.6
Employed	6,465	6,345	6,481	6,781	6,786	6,687	6,840	6,683	6,796
Employment-population ratio[2]	44.7	44.8	45.9	46.9	47.8	47.1	48.3	47.2	48.2
Agriculture	238	209	221	283	230	249	300	216	260
Nonagricultural industries	6,228	6,136	6,260	6,498	6,556	6,438	6,540	6,467	6,536
Unemployed	1,134	1,153	1,122	1,194	1,254	1,150	1,163	1,193	1,187
Unemployment rate	14.9	15.4	14.8	15.0	15.6	14.7	14.5	15.1	14.9

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
WHITE									
Civilian noninstitutional population	158,524	159,549	159,844	158,524	159,297	159,400	159,470	159,549	159,844
Civilian labor force	105,296	106,186	106,780	105,051	106,455	106,424	106,446	106,326	106,544
Participation rate	66.4	66.6	66.9	66.3	66.8	66.8	66.8	66.6	66.7
Employed	100,723	101,600	102,291	100,199	101,693	101,581	101,670	101,535	101,816
Employment-population ratio[2]	63.5	63.7	64.1	63.2	63.8	63.7	63.8	63.6	63.8
Unemployed	4,572	4,586	4,489	4,852	4,762	4,843	4,777	4,791	4,728
Unemployment rate	4.3	4.3	4.2	4.6	4.5	4.6	4.5	4.5	4.4
Men, 20 years and over									
Civilian labor force	54,924	55,433	55,659	54,861	55,557	55,437	55,377	55,413	55,606
Participation rate	78.4	78.3	78.5	78.3	78.7	78.4	78.3	78.3	78.5
Employed	52,930	53,416	53,735	52,612	53,500	53,343	53,292	53,097	53,468
Employment-population ratio[2]	75.5	75.5	75.8	75.1	75.8	75.5	75.3	75.0	75.5
Unemployed	1,994	2,017	1,924	2,249	2,057	2,094	2,085	2,316	2,138
Unemployment rate	3.6	3.6	3.5	4.1	3.7	3.8	3.8	4.2	3.8
Women, 20 years and over									
Civilian labor force	43,814	44,356	44,637	43,298	44,050	44,302	44,169	44,192	44,123
Participation rate	57.2	57.4	57.7	56.5	57.1	57.4	57.2	57.2	57.0
Employed	42,093	42,570	42,876	41,583	42,236	42,411	42,372	42,527	42,368
Employment-population ratio[2]	54.9	55.1	55.4	54.2	54.8	55.0	54.9	55.0	54.8
Unemployed	1,721	1,786	1,761	1,715	1,814	1,891	1,798	1,665	1,756
Unemployment rate	3.9	4.0	3.9	4.0	4.1	4.3	4.1	3.8	4.0
Both sexes, 16 to 19 years									
Civilian labor force	6,557	6,405	6,484	6,892	6,848	6,685	6,900	6,720	6,815
Participation rate	55.7	55.9	56.6	58.5	59.2	57.9	60.0	58.6	59.7
Employed	5,700	5,614	5,680	6,004	5,957	5,827	6,016	5,910	5,981
Employment-population ratio[2]	48.4	49.0	49.7	51.0	51.5	50.5	52.3	51.6	52.4
Unemployed	857	790	804	888	891	858	884	810	834
Unemployment rate	13.1	12.3	12.4	12.9	13.0	12.8	12.8	12.1	12.2
Men	14.4	12.9	13.9	14.4	13.4	12.4	12.9	13.3	13.9
Women	11.6	11.7	10.8	11.3	12.6	13.4	12.7	10.8	10.4
BLACK									
Civilian noninstitutional population	20,786	21,085	21,108	20,786	21,012	21,038	21,060	21,085	21,108
Civilian labor force	13,307	13,481	13,504	13,290	13,600	13,555	13,448	13,515	13,481
Participation rate	64.0	63.9	64.0	63.9	64.7	64.4	63.9	64.1	63.9
Employed	11,873	11,956	11,988	11,807	11,982	12,082	11,958	11,940	11,902
Employment-population ratio[2]	57.1	56.7	56.8	56.8	57.0	57.4	56.8	56.6	56.4
Unemployed	1,434	1,524	1,516	1,483	1,618	1,473	1,490	1,574	1,589
Unemployment rate	10.8	11.3	11.2	11.2	11.9	10.9	11.1	11.6	11.8
Men, 20 years and over									
Civilian labor force	6,147	6,246	6,218	6,157	6,200	6,205	6,189	6,247	6,236
Participation rate	74.4	74.6	74.1	74.6	74.1	74.1	73.8	74.7	74.3
Employed	5,593	5,682	5,630	5,566	5,619	5,629	5,580	5,620	5,596
Employment-population ratio[2]	67.7	67.9	67.1	67.4	67.2	67.2	66.6	67.2	66.7
Unemployed	554	564	588	591	581	576	609	627	640
Unemployment rate	9.0	9.0	9.5	9.6	9.4	9.3	9.8	10.0	10.3
Women, 20 years and over									
Civilian labor force	6,309	6,369	6,401	6,234	6,406	6,394	6,359	6,356	6,320
Participation rate	61.0	60.8	60.8	60.2	61.2	61.0	60.5	60.4	60.0
Employed	5,681	5,731	5,759	5,620	5,732	5,759	5,762	5,749	5,691
Employment-population ratio[2]	54.9	54.5	54.7	54.3	54.7	54.9	54.9	54.6	54.0
Unemployed	628	639	642	614	674	635	597	607	629
Unemployment rate	10.0	10.0	10.0	[illegible]	10.5	9.9	9.4	9.6	10.0
Both sexes, 16 to 19 years									
Civilian labor force	861	865	885	899	994	956	900	912	935
Participation rate	39.0	38.4	40.6	41.2	45.7	44.0	41.4	41.5	42.9
Employed	609	544	598	621	631	694	616	572	615
Employment-population ratio[2]	27.5	24.7	27.4	28.5	29.0	31.9	28.3	26.0	28.2
Unemployed	252	322	287	278	363	262	284	340	320
Unemployment rate	29.5	37.2	32.4	30.9	36.5	27.4	31.6	37.3	34.2
Men	33.1	34.4	32.2	32.8	33.5	22.1	30.0	34.1	32.4
Women	25.2	39.6	32.6	28.6	40.2	33.1	33.4	40.3	36.1

See footnotes at end of table.

Table A-3. Employment status of the civilian population by race, sex, age, and Hispanic origin—Continued

(Numbers in thousands)

Employment status, race, sex, age, and Hispanic origin	Not seasonally adjusted			Seasonally adjusted[1]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
HISPANIC ORIGIN									
Civilian noninstitutional population	13,488	13,894	13,936	13,488	13,772	13,813	13,853	13,894	13,936
Civilian labor force	9,109	9,332	9,333	9,075	9,272	9,433	9,364	9,326	9,311
Participation rate	67.7	67.2	67.0	67.4	67.3	68.3	67.6	67.1	66.8
Employed	8,428	8,610	8,631	8,368	8,524	8,587	8,521	8,550	8,580
Employment-population ratio[2]	62.6	62.0	61.9	62.2	61.9	62.2	61.5	61.5	61.6
Unemployed	681	722	702	707	748	846	843	776	731
Unemployment rate	7.5	7.7	7.5	7.8	8.1	9.0	9.0	8.3	7.9

[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

Table A-4. Selected employment indicators

(In thousands)

Category	Not seasonally adjusted			Seasonally adjusted					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
CHARACTERISTIC									
Civilian employed, 16 years and over	116,260	117,488	118,194	115,573	117,541	117,459	117,597	117,456	117,545
Married men, spouse present	40,869	40,866	41,142	40,504	41,102	41,089	40,836	40,572	40,775
Married women, spouse present	29,399	29,606	29,847	28,990	29,461	29,552	29,220	29,461	29,475
Women who maintain families	6,396	6,379	6,399	6,344	6,403	6,456	6,342	6,437	6,348
MAJOR INDUSTRY AND CLASS OF WORKER									
Agriculture:									
Wage and salary workers	1,670	1,676	1,707	1,661	1,550	1,665	1,603	1,671	1,660
Self-employed workers	1,471	1,523	1,481	1,406	1,412	1,434	1,420	1,441	1,413
Unpaid family workers	175	120	120	177	126	128	137	135	121
Nonagricultural industries:									
Wage and salary workers	104,127	105,287	105,830	103,733	105,519	105,321	105,259	105,356	105,413
Government	17,472	17,513	17,846	17,240	17,261	17,519	17,591	17,619	17,582
Private industries	86,655	87,775	87,984	86,493	88,258	87,803	87,668	87,737	87,830
Private households	1,186	1,011	1,001	1,152	1,140	1,093	1,146	1,054	968
Other industries	85,470	86,764	86,983	85,341	87,118	86,710	86,522	86,682	86,862
Self-employed workers	8,583	8,586	8,784	8,479	8,570	8,808	8,625	8,569	8,880
Unpaid family workers	234	296	271	232	241	238	264	296	295
PERSONS AT WORK PART TIME[1]									
All industries:									
Part time for economic reasons	4,868	4,487	4,436	4,963	4,957	4,750	4,785	4,882	4,728
Slack work	2,125	2,097	2,240	2,220	2,318	2,311	2,282	2,330	2,336
Could only find part-time work	2,246	1,891	1,906	2,399	2,299	2,138	2,107	2,171	2,037
Voluntary part time	16,164	15,998	16,313	15,161	15,418	15,652	15,614	15,542	15,303
Nonagricultural industries:									
Part time for economic reasons	4,452	4,229	4,218	4,727	4,801	4,505	4,563	4,612	4,466
Slack work	1,960	1,935	2,084	2,095	2,190	2,195	2,129	2,174	2,178
Could only find part-time work	2,174	1,910	1,861	2,319	2,236	2,057	2,024	2,090	1,975
Voluntary part time	15,681	15,215	15,678	14,679	14,977	15,219	15,094	15,109	14,865

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial dispute.

Table A-6. Range of unemployment measures based on varying definitions of unemployment and the labor force, seasonally adjusted

(Percent)

Measure	Quarterly averages					Monthly data		
	1988		1989			1989		
	III	IV	I	II	III	Aug.	Sept.	Oct.
U-1 Persons unemployed 15 weeks or longer as a percent of the civilian labor force	1.3	1.2	1.1	1.1	1.1	1.1	1.1	1.1
U-2 Job losers as a percent of the civilian labor force	2.5	2.5	2.4	2.3	2.4	2.4	2.4	2.4
U-3 Unemployed persons 25 years and over as a percent of the civilian labor force for persons 25 years and over	4.2	4.1	4.0	4.0	4.0	4.0	4.1	4.0
U-4 Unemployed full-time jobseekers as a percent of the full-time civilian labor force	5.1	5.0	4.9	4.9	4.9	4.9	5.0	4.9
U-5a Total unemployed as a percent of the labor force, including the resident Armed Forces	5.4	5.3	5.1	5.2	5.2	5.1	5.2	5.2
U-5b Total unemployed as a percent of the civilian labor force	5.5	5.3	5.2	5.3	5.2	5.2	5.3	5.3
U-6 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons as a percent of the civilian labor force less 1/2 of the part-time labor force	7.6	7.5	7.2	7.2	7.2	7.1	7.3	7.1
U-7 Total full-time jobseekers plus 1/2 part-time jobseekers plus 1/2 total on part time for economic reasons plus discouraged workers as a percent of the civilian labor force plus discouraged workers less 1/2 of the part-time labor force	8.4	8.2	7.9	7.9	7.9	N.A.	N.A.	N.A.

N.A. = not available.

Table A-8. Selected unemployment indicators, seasonally adjusted

Category	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
CHARACTERISTIC									
Total, 16 years and over	6,518	6,584	6,561	5.3	5.3	5.2	5.2	5.3	5.3
Men, 16 years and over	3,583	3,672	3,576	5.4	5.0	4.8	5.0	5.4	5.3
Men, 20 years and over	2,911	3,036	2,802	4.6	4.3	4.3	4.4	4.8	4.5
Women, 16 years and over	2,925	2,912	2,985	5.3	5.6	5.7	5.4	5.2	5.3
Women, 20 years and over	2,413	2,353	2,472	4.7	4.9	5.0	4.7	4.5	4.7
Both sexes, 16 to 19 years	1,194	1,193	1,187	15.0	15.6	14.7	14.5	15.1	14.9
Married men, spouse present	1,302	1,424	1,271	3.1	2.8	2.9	3.1	3.4	3.0
Married women, spouse present	1,110	1,154	1,221	3.7	3.8	3.8	3.9	3.8	4.0
Women who maintain families	541	529	526	7.9	7.9	8.7	8.0	7.6	7.6
Full-time workers	5,176	5,255	5,218	5.0	4.8	4.9	4.9	5.0	4.9
Part-time workers	1,306	1,330	1,294	7.4	7.7	7.2	6.9	7.3	7.1
Labor force time lost[2]	—	—	—	6.1	6.1	6.0	5.9	5.9	5.8
INDUSTRY									
Nonagricultural private wage and salary workers	4,934	5,021	4,917	5.4	5.3	5.1	5.4	5.4	5.3
Goods-producing industries	1,852	1,825	1,807	6.4	6.2	6.2	6.4	6.3	6.2
Mining	66	61	34	8.8	3.7	5.5	6.5	8.5	5.1
Construction	631	648	674	10.0	10.0	10.5	10.3	10.4	9.0
Manufacturing	1,153	1,116	1,180	5.3	5.2	5.0	5.2	5.1	5.4
Durable goods	636	613	661	5.0	4.8	4.7	4.8	4.7	5.2
Nondurable goods	515	503	518	5.7	6.1	5.5	5.9	5.5	5.6
Service-producing industries	3,082	3,196	3,110	4.9	4.9	5.0	4.9	5.0	4.9
Transportation and public utilities	217	298	244	3.5	4.4	4.2	3.6	4.7	3.9
Wholesale and retail trade	1,380	1,374	1,381	6.0	6.0	6.2	6.0	5.8	5.8
Finance and service industries	1,486	1,524	1,475	4.5	4.3	4.4	4.4	4.5	4.4
Government workers	462	506	486	2.6	3.0	2.8	2.7	2.8	2.7
Agricultural wage and salary workers	186	140	186	10.2	11.0	8.5	8.6	7.7	10.0

[1] Unemployment as a percent of the civilian labor force.

[2] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

Table A-7. Duration of unemployment

(Numbers in thousands)

Weeks of unemployment	Not seasonally adjusted			Seasonally adjusted					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
DURATION									
Less than 5 weeks	3,056	3,358	3,132	3,050	3,300	3,149	3,071	3,156	3,138
5 to 14 weeks	1,747	1,737	1,862	1,835	1,990	1,927	2,011	2,036	1,972
15 weeks and over	1,379	1,237	1,228	1,554	1,258	1,472	1,306	1,370	1,374
15 to 26 weeks	660	664	624	788	660	846	737	789	728
27 weeks and over	719	573	605	766	598	626	567	581	646
Average (mean) duration, in weeks	13.1	11.3	11.6	13.4	11.1	12.0	11.3	11.4	11.8
Median duration, in weeks	5.1	4.2	4.5	5.7	5.5	5.6	5.0	5.0	4.9
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	49.4	53.0	50.3	47.4	50.4	48.1	48.1	48.1	48.4
5 to 14 weeks	28.3	27.4	29.9	28.5	30.4	29.4	31.5	31.0	30.4
15 weeks and over	22.3	19.5	19.7	24.1	19.2	22.5	20.4	20.9	21.2
15 to 26 weeks	10.7	10.5	10.0	12.2	10.0	12.9	11.6	12.0	11.2
27 weeks and over	11.6	9.1	9.7	11.9	9.1	9.6	8.9	8.8	10.0

Table A-8. Reason for unemployment

(Numbers in thousands)

Reasons	Not seasonally adjusted			Seasonally adjusted					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
NUMBER OF UNEMPLOYED									
Job losers	2,641	2,586	2,625	2,951	2,765	2,920	2,984	2,915	2,917
On layoff	691	631	620	844	806	822	873	828	753
Other job losers	1,950	1,955	2,004	2,107	1,958	2,097	2,111	2,087	2,163
Job leavers	1,059	1,162	1,052	984	1,023	1,010	1,040	1,039	979
Reentrants	1,805	1,997	1,933	1,747	2,051	1,934	1,766	1,946	1,891
New entrants	676	585	613	747	742	724	628	629	686
PERCENT DISTRIBUTION									
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	42.7	40.9	42.2	45.9	42.0	44.3	46.5	44.6	45.1
On layoff	11.2	10.0	10.0	13.1	12.3	12.5	13.6	12.7	11.6
Other job losers	31.5	30.9	32.2	32.8	29.8	31.8	32.9	32.0	33.4
Job leavers	17.1	18.4	16.9	15.3	15.5	15.3	16.2	15.9	15.1
Reentrants	29.2	31.5	31.1	27.2	31.2	29.4	27.5	29.8	29.2
New entrants	10.9	9.2	9.9	11.6	11.3	11.0	9.8	9.6	10.6
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE									
Job losers	2.2	2.1	2.1	2.4	2.2	2.4	2.4	2.4	2.4
Job leavers	.9	.9	.8	.8	.8	.8	.8	.8	.8
Reentrants	1.5	1.6	1.6	1.4	1.7	1.6	1.4	1.6	1.5
New entrants	.6	.5	.5	.6	.6	.6	.5	.5	.6

Table A-9. Unemployed persons by sex and age, seasonally adjusted

Sex and age	Number of unemployed persons (in thousands)			Unemployment rates[1]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
Total, 16 years and over	6,518	6,584	6,581	5.3	5.3	5.2	5.2	5.3	5.3
16 to 24 years	2,429	2,444	2,430	10.9	11.3	10.7	10.9	11.2	11.1
16 to 19 years	1,194	1,193	1,187	15.0	15.6	14.7	14.5	15.1	14.9
16 to 17 years	559	518	539	17.2	17.5	17.8	18.1	16.8	16.8
18 to 19 years	629	683	643	13.3	14.9	12.4	12.5	14.2	13.5
20 to 24 years	1,235	1,251	1,243	8.8	8.9	8.6	8.8	8.9	8.9
25 years and over	4,081	4,182	4,116	4.1	4.0	4.0	4.0	4.1	4.0
25 to 54 years	3,651	3,698	3,644	4.3	4.1	4.2	4.1	4.3	4.2
55 years and over	419	461	457	2.8	3.3	3.1	3.1	3.0	3.0
Men, 16 years and over	3,593	3,672	3,576	5.4	5.0	4.8	5.0	5.4	5.3
16 to 24 years	1,376	1,380	1,366	11.8	11.5	10.4	11.4	12.1	11.8
16 to 19 years	682	634	674	16.5	15.8	13.4	14.7	15.8	16.1
16 to 17 years	318	311	315	18.5	20.0	17.4	17.4	19.8	18.6
18 to 19 years	360	334	359	15.0	13.6	10.7	12.7	13.5	14.4
20 to 24 years	694	746	682	9.2	9.2	8.7	9.6	10.1	9.3
25 years and over	2,195	2,324	2,198	4.0	3.7	3.7	3.7	4.1	3.9
25 to 54 years	1,946	1,992	1,923	4.2	3.7	3.9	3.8	4.2	4.0
55 years and over	266	313	273	3.0	3.0	3.1	3.3	3.6	3.1
Women, 16 years and over	2,925	2,912	2,985	5.3	5.6	5.7	5.4	5.2	5.3
16 to 24 years	1,053	1,064	1,064	9.9	11.0	11.1	10.2	10.1	10.3
16 to 19 years	512	559	513	13.3	15.4	16.0	14.4	14.5	13.5
16 to 17 years	241	207	224	15.8	14.7	18.3	18.8	13.7	14.7
18 to 19 years	269	349	284	11.6	16.2	14.4	12.4	14.8	12.5
20 to 24 years	541	505	561	7.9	8.6	8.4	7.9	7.6	8.4
25 years and over	1,886	1,858	1,919	4.2	4.4	4.4	4.2	4.1	4.2
25 to 54 years	1,705	1,706	1,720	4.5	4.5	4.6	4.5	4.3	4.4
55 years and over	153	147	184	2.4	3.8	3.2	2.7	2.2	2.8

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[1] Unemployment as a percent of the civilian labor force.

Table A-10. Employment status of black and other workers

(Numbers in thousands)

Employment status	Not seasonally adjusted			Seasonally adjusted[1]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
Civilian noninstitutional population	26,590	27,177	27,227	26,590	27,031	27,082	27,128	27,177	27,227
Civilian labor force	17,137	17,632	17,636	17,070	17,607	17,618	17,589	17,680	17,574
Participation rate	64.5	64.9	64.8	64.2	65.1	65.1	64.8	65.1	64.5
Employed	15,527	15,897	15,902	15,394	15,795	15,934	15,910	15,892	15,759
Employment-population ratio[2]	58.4	58.5	58.4	57.9	58.4	58.8	58.6	58.5	57.9
Unemployed	1,610	1,735	1,734	1,676	1,812	1,684	1,680	1,788	1,815
Unemployment rate	9.4	9.8	9.8	9.8	10.3	9.6	9.5	10.1	10.3
Not in labor force	9,453	9,545	9,591	9,520	9,424	9,464	9,539	9,497	9,653

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[1] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and seasonally adjusted columns.

[2] Civilian employment as a percent of the civilian noninstitutional population.

Table A-11. Occupational status of the employed and unemployed, not seasonally adjusted

(Numbers in thousands)

Occupation	Civilian employed		Unemployed		Unemployment rate	
	Oct. 1988	Oct. 1989	Oct. 1988	Oct. 1989	Oct. 1988	Oct. 1989
Total, 16 years and over[1]	116,250	118,194	6,182	6,222	5.0	5.0
Managerial and professional specialty	29,616	31,224	583	593	1.9	1.9
Executive, administrative, and managerial	14,230	15,146	291	337	2.0	2.2
Professional specialty	15,387	16,078	292	256	1.9	1.6
Technical, sales, and administrative support	35,819	36,009	1,455	1,541	3.9	4.1
Technicians and related support	3,604	3,543	94	99	2.5	2.7
Sales occupations	13,879	14,006	672	664	4.6	4.5
Administrative support, including clerical	18,336	18,460	689	777	3.6	4.0
Service occupations	15,408	15,407	1,130	1,032	6.8	6.3
Private household	915	796	53	41	5.5	4.9
Protective service	1,990	1,883	97	62	4.7	3.2
Service, except private household and protective	12,503	12,728	980	929	7.3	6.8
Precision production, craft, and repair	13,663	13,930	712	652	5.0	4.5
Mechanics and repairers	4,333	4,482	176	147	3.9	3.2
Construction trades	5,113	5,404	346	348	6.3	6.1
Other precision production, craft, and repair	4,217	4,044	190	158	4.3	3.7
Operators, fabricators, and laborers	18,206	18,145	1,368	1,436	7.0	7.3
Machine operators, assemblers, and inspectors	8,271	8,160	616	632	6.9	7.2
Transportation and material moving occupations	4,960	5,113	210	267	4.1	5.0
Handlers, equipment cleaners, helpers, and laborers	4,975	4,872	542	536	9.8	9.9
Construction laborers	902	733	141	104	13.5	12.4
Other handlers, equipment cleaners, helpers, and laborers	4,072	4,139	401	435	9.0	9.5
Farming, forestry, and fishing	3,537	3,478	236	233	6.3	6.3

[1] Persons with no previous work experience and those whose last job was in the Armed Forces are included in the unemployed total.

Table A-12. Employment status of male Vietnam-era veterans and nonveterans by age, not seasonally adjusted

(Numbers in thousands)

Veteran status and age	Civilian noninstitutional population		Civilian labor force							
			Total		Employed		Unemployed			
							Number		Percent of labor force	
	Oct. 1988	Oct. 1989	Oct. 1988	Oct. 1989	Oct. 1988	Oct. 1989	Oct. 1988	Oct. 1989	Oct. 1988	Oct. 1989
VIETNAM-ERA VETERANS										
Total, 30 years and over	7,890	7,927	7,318	7,251	7,069	6,994	249	257	3.4	3.5
30 to 44 years	5,790	5,368	5,524	5,079	5,334	4,908	190	171	3.4	3.4
30 to 34 years	622	423	582	379	537	364	45	15	7.7	4.0
35 to 39 years	2,034	1,644	1,937	1,536	1,871	1,486	66	51	3.4	3.3
40 to 44 years	3,143	3,301	3,005	3,163	2,926	3,058	79	106	2.6	3.3
45 years and over	2,100	2,559	1,794	2,171	1,735	2,086	59	86	3.3	3.9
NONVETERANS										
Total, 30 to 44 years	20,707	21,789	19,703	20,699	18,974	19,989	729	710	3.7	3.4
30 to 34 years	9,165	9,434	8,768	8,999	8,410	8,668	358	331	4.1	3.7
35 to 39 years	6,997	7,549	6,657	7,186	6,418	6,959	239	227	3.6	3.2
40 to 44 years	4,545	4,806	4,278	4,515	4,146	4,362	132	152	3.1	3.4

NOTE: Male Vietnam-era veterans are men who served in the Armed Forces between August 5, 1964 and May 7, 1975. Nonveterans are men who have never served in the Armed Forces; published data are limited to those 30 to 44 years of age, the group that most closely corresponds to the bulk of the Vietnam-era veteran population.

Table A-13. Employment status of the civilian population for eleven large States

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
California									
Civilian noninstitutional population	20,927	21,227	21,263	20,927	21,122	21,147	21,192	21,227	21,263
Civilian labor force	14,074	14,409	14,475	14,083	14,286	14,443	14,358	14,452	14,457
Employed	13,404	13,695	13,816	13,383	13,489	13,674	13,706	13,716	13,767
Unemployed	670	715	659	700	797	769	652	736	690
Unemployment rate	4.8	5.0	4.6	5.0	5.6	5.3	4.5	5.1	4.8
Florida									
Civilian noninstitutional population	9,777	9,996	10,014	9,777	9,942	9,965	9,978	9,996	10,014
Civilian labor force	6,190	6,198	6,284	6,170	6,344	6,286	6,209	6,194	6,259
Employed	5,886	5,843	5,925	5,862	5,960	5,930	5,884	5,846	5,895
Unemployed	304	355	359	308	384	356	325	348	364
Unemployment rate	4.9	5.7	5.7	5.0	6.1	5.7	5.2	5.6	5.8
Illinois									
Civilian noninstitutional population	8,718	8,711	8,714	8,718	8,701	8,699	8,706	8,711	8,714
Civilian labor force	5,799	5,974	5,954	5,771	5,934	5,860	5,889	5,944	5,934
Employed	5,449	5,644	5,581	5,388	5,609	5,533	5,540	5,576	5,531
Unemployed	350	330	374	383	325	327	349	368	403
Unemployment rate	6.0	5.5	6.3	6.6	5.5	5.6	5.9	6.2	6.8
Massachusetts									
Civilian noninstitutional population	4,598	4,606	4,607	4,598	4,600	4,601	4,604	4,605	4,607
Civilian labor force	3,143	3,112	3,113	3,151	3,166	3,183	3,191	3,130	3,121
Employed	3,054	2,978	2,985	3,047	3,040	3,041	3,060	2,993	2,979
Unemployed	89	134	128	104	126	142	131	137	142
Unemployment rate	2.8	4.3	4.1	3.3	4.0	4.5	4.1	4.4	4.5
Michigan									
Civilian noninstitutional population	7,050	7,101	7,103	7,050	7,097	7,104	7,100	7,101	7,103
Civilian labor force	4,621	4,689	4,759	4,615	4,630	4,646	4,673	4,682	4,749
Employed	4,314	4,339	4,391	4,282	4,291	4,331	4,352	4,305	4,360
Unemployed	307	349	368	333	339	315	321	377	389
Unemployment rate	6.6	7.5	7.7	7.2	7.3	6.8	6.9	8.1	8.2
New Jersey									
Civilian noninstitutional population	6,046	6,068	6,071	6,046	6,062	6,064	6,066	6,068	6,071
Civilian labor force	3,907	3,974	3,987	3,963	3,971	3,976	3,990	4,014	4,046
Employed	3,769	3,803	3,795	3,810	3,806	3,814	3,810	3,828	3,839
Unemployed	138	171	192	153	165	162	180	186	207
Unemployment rate	3.5	4.3	4.8	3.9	4.2	4.1	4.5	4.6	5.1
New York									
Civilian noninstitutional population	13,805	13,817	13,820	13,805	13,812	13,814	13,816	13,817	13,820
Civilian labor force	8,562	8,595	8,675	8,533	8,705	8,674	8,557	8,649	8,662
Employed	8,202	8,147	8,274	8,174	8,266	8,269	8,127	8,182	8,257
Unemployed	360	448	402	359	439	405	430	467	405
Unemployment rate	4.2	5.2	4.6	4.2	5.0	4.7	5.0	5.4	4.7
North Carolina									
Civilian noninstitutional population	4,943	5,021	5,027	4,943	5,008	5,014	5,016	5,021	5,027
Civilian labor force	3,402	3,445	3,446	3,387	3,463	3,444	3,432	3,454	3,432
Employed	3,273	3,324	3,341	3,254	3,339	3,327	3,304	3,315	3,321
Unemployed	129	121	106	133	124	117	128	139	111
Unemployment rate	3.8	3.5	3.1	3.9	3.6	3.4	3.7	4.0	3.2
Ohio									
Civilian noninstitutional population	8,269	8,320	8,323	8,269	8,313	8,320	8,318	8,320	8,323
Civilian labor force	5,365	5,460	5,513	5,349	5,490	5,450	5,469	5,491	5,503
Employed	5,087	5,192	5,203	5,049	5,183	5,157	5,209	5,216	5,169
Unemployed	278	268	310	300	307	293	260	275	334
Unemployment rate	5.2	4.9	5.6	5.6	5.6	5.4	4.8	5.0	6.1

See footnotes at end of table.

Table A-13. Employment status of the civilian population for eleven large States—Continued

(Numbers in thousands)

State and employment status	Not seasonally adjusted[1]			Seasonally adjusted[2]					
	Oct. 1988	Sept. 1989	Oct. 1989	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989	Oct. 1989
Pennsylvania									
Civilian noninstitutional population	9,390	9,435	9,439	9,390	9,427	9,433	9,433	9,435	9,439
Civilian labor force	5,807	5,862	5,857	5,744	5,917	5,823	5,768	5,813	5,798
Employed	5,514	5,625	5,598	5,436	5,678	5,562	5,520	5,572	5,530
Unemployed	294	237	259	308	239	261	248	241	268
Unemployment rate	5.1	4.0	4.4	5.4	4.0	4.5	4.3	4.1	4.6
Texas									
Civilian noninstitutional population	12,005	11,998	12,001	12,005	11,990	11,989	11,996	11,998	12,001
Civilian labor force	8,324	8,266	8,293	8,309	8,223	8,241	8,352	8,253	8,287
Employed	7,757	7,745	7,793	7,708	7,721	7,645	7,729	7,737	7,753
Unemployed	568	521	500	601	502	596	623	516	534
Unemployment rate	6.8	6.3	6.0	7.2	6.1	7.2	7.5	6.3	6.4

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[1] These are the official Bureau of Labor Statistics' estimates used in the administration of Federal fund allocation programs.

[2] The population figures are not adjusted for seasonal variation; therefore, identical numbers appear in the unadjusted and the seasonally adjusted columns.

Table B-1. Employees on nonagricultural payrolls by industry

(In thousands)

Industry	Not seasonally adjusted				Seasonally adjusted					
	Oct. 1988	Aug. 1989	Sept. 1989p/	Oct. 1989p/	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989p/	Oct. 1989p/
Total	107,279	108,666	109,477	110,124	106,475	108,607	108,767	108,887	109,088	109,321
Total private	89,571	91,973	91,791	91,896	88,991	90,884	91,016	91,083	91,185	91,324
Goods-producing industries	25,755	26,138	26,060	25,973	25,384	25,648	25,669	25,694	25,607	25,604
Mining	725	739	739	741	717	715	706	729	730	732
Oil and gas extraction	404.2	409.3	410.5	413.2	400	402	404	405	408	410
Construction	5,415	5,677	5,603	5,585	5,162	5,283	5,314	5,321	5,321	5,329
General building contractors	1,420.6	1,481.8	1,449.2	1,444.5	1,363	1,384	1,391	1,403	1,396	1,386
Manufacturing	19,615	19,722	19,718	19,647	19,505	19,650	19,649	19,644	19,556	19,543
Production workers	13,433	13,452	13,473	13,415	13,324	13,400	13,410	13,401	13,321	13,311
Durable goods	11,558	11,534	11,540	11,493	11,509	11,567	11,549	11,551	11,477	11,449
Production workers	7,739	7,667	7,690	7,658	7,698	7,706	7,697	7,696	7,631	7,613
Lumber and wood products	781.2	786.4	788.0	773.7	770	769	767	763	759	763
Furniture and fixtures	535.8	527.0	529.7	529.6	531	534	536	529	528	525
Stone, clay, and glass products	611.0	613.2	608.3	606.3	603	603	602	601	596	599
Primary metal industries	781.4	782.7	779.0	773.8	783	787	785	786	776	775
Blast furnaces and basic steel products	275.4	276.3	273.5	270.6	277	276	277	276	273	272
Fabricated metal products	1,451.2	1,437.3	1,446.4	1,441.6	1,442	1,449	1,446	1,443	1,438	1,433
Machinery, except electrical	2,105.3	2,140.9	2,145.6	2,135.3	2,110	2,151	2,154	2,152	2,148	2,140
Electrical and electronic equipment	2,081.7	2,033.6	2,029.7	2,025.4	2,073	2,041	2,040	2,034	2,024	2,017
Transportation equipment	2,059.8	2,032.8	2,044.3	2,026.4	2,055	2,062	2,046	2,068	2,036	2,024
Motor vehicles and equipment	870.4	846.4	858.6	832.1	865	861	844	873	844	830
Instruments and related products	757.6	783.1	779.1	780.2	758	779	781	782	780	781
Miscellaneous manufacturing	393.0	396.5	398.1	401.1	384	392	392	393	392	392
Nondurable goods	8,057	8,188	8,178	8,154	7,996	8,083	8,100	8,093	8,079	8,094
Production workers	5,694	5,785	5,783	5,757	5,634	5,694	5,713	5,705	5,690	5,698
Food and kindred products	1,685.7	1,752.4	1,761.0	1,729.0	1,644	1,663	1,678	1,667	1,677	1,684
Tobacco manufactures	58.7	52.2	53.5	53.7	55	52	53	52	51	51
Textile mill products	728.9	729.0	727.7	728.5	726	729	730	727	723	726
Apparel and other textile products	1,092.8	1,093.5	1,090.6	1,091.4	1,083	1,093	1,094	1,095	1,085	1,083
Paper and allied products	696.0	704.0	698.9	699.9	695	697	701	700	697	699
Printing and publishing	1,575.2	1,606.3	1,605.5	1,612.0	1,577	1,607	1,609	1,611	1,612	1,614
Chemicals and allied products	1,073.5	1,104.2	1,096.8	1,094.6	1,074	1,096	1,091	1,097	1,095	1,096
Petroleum and coal products	163.5	166.4	165.3	165.1	162	163	163	163	163	164
Rubber and misc. plastics products	837.5	838.1	837.6	839.5	836	841	841	841	837	838
Leather and leather products	145.5	142.1	141.1	140.7	144	142	140	140	139	139
Service-producing industries	81,524	82,528	83,417	84,151	81,091	82,959	83,098	83,193	83,481	83,717
Transportation and public utilities	5,645	5,617	5,757	5,786	5,596	5,716	5,736	5,618	5,711	5,738
Transportation	3,432	3,521	3,594	3,623	3,381	3,500	3,524	3,539	3,548	3,573
Communication and public utilities	2,213	2,096	2,163	2,163	2,215	2,216	2,212	2,079	2,163	2,165
Wholesale trade	6,111	6,293	6,282	6,294	6,086	6,230	6,237	6,256	6,264	6,270
Durable goods	3,604	3,727	3,717	3,721	3,599	3,693	3,700	3,708	3,717	3,717
Nondurable goods	2,507	2,566	2,565	2,573	2,487	2,537	2,537	2,548	2,547	2,553
Retail trade	19,281	19,758	19,708	19,692	19,229	19,551	19,586	19,621	19,629	19,653
General merchandise stores	2,463.4	2,429.4	2,434.5	2,477.2	2,447	2,493	2,422	2,484	2,484	2,465
Food stores	3,154.2	3,299.1	3,294.1	3,323.2	3,149	3,262	3,274	3,293	3,294	3,317
Automotive dealers and service stations	2,131.6	2,182.2	2,175.4	2,175.7	2,124	2,155	2,155	2,152	2,156	2,169
Eating and drinking places	6,317.6	6,576.8	6,551.0	6,409.0	6,314	6,362	6,370	6,385	6,397	6,403
Finance, insurance, and real estate	6,693	6,920	6,860	6,835	6,710	6,808	6,815	6,836	6,851	6,852
Finance	3,280	3,359	3,336	3,327	3,293	3,320	3,324	3,336	3,343	3,340
Insurance	2,094	2,143	2,132	2,136	2,098	2,129	2,131	2,137	2,138	2,140
Real estate	1,319	1,418	1,392	1,372	1,319	1,359	1,360	1,363	1,370	1,372
Services	26,086	27,247	27,204	27,316	25,986	26,931	26,973	27,058	27,123	27,207
Business services	5,723.5	5,864.2	5,882.2	5,889.1	5,667	5,799	5,786	5,800	5,830	5,831
Health services	7,266.7	7,717.7	7,734.0	7,766.7	7,267	7,616	7,648	7,695	7,734	7,767
Government	17,708	16,693	17,686	18,228	17,484	17,723	17,751	17,804	17,903	17,997
Federal	2,968	3,011	2,998	2,989	2,986	2,995	3,000	2,999	3,016	3,004
State	4,179	3,926	4,138	4,330	4,081	4,136	4,145	4,154	4,214	4,224
Local	10,561	9,756	10,470	10,909	10,417	10,592	10,606	10,651	10,673	10,769

p = preliminary.

Table B-2. Average weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	Oct. 1988	Aug. 1989	Sept. 1989p/	Oct. 1989p/	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989p/	Oct. 1989p/
Total private	34.9	34.9	34.8	34.9	34.8	34.6	34.8	34.6	34.7	34.8
Mining	42.6	43.2	43.9	44.6	(2)	(2)	(2)	(2)	(2)	(2)
Construction	39.1	39.0	38.6	39.2	(2)	(2)	(2)	(2)	(2)	(2)
Manufacturing	41.3	40.8	41.2	41.0	41.2	41.0	41.0	41.0	41.1	40.8
Overtime hours	4.1	3.8	4.1	3.9	4.0	3.8	3.9	3.8	3.8	3.8
Durable goods	42.0	41.3	41.7	41.3	41.9	41.5	41.5	41.6	41.6	41.4
Overtime hours	4.3	3.8	4.1	4.0	4.2	3.9	4.0	3.9	3.9	3.8
Lumber and wood products	41.0	40.4	40.4	40.6	40.7	39.8	39.6	40.2	40.2	40.4
Furniture and fixtures	40.1	39.8	40.1	40.1	39.4	39.4	39.3	39.6	39.6	39.4
Stone, clay, and glass products	43.0	42.8	42.6	42.8	42.3	42.2	42.3	42.5	42.2	42.3
Primary metal industries	43.6	42.3	42.9	42.6	43.7	43.3	43.0	42.9	42.8	42.7
Blast furnaces and basic steel products	43.9	43.0	43.1	42.9	44.2	43.7	43.2	43.4	42.9	43.2
Fabricated metal products	42.0	41.2	41.8	41.8	41.9	41.5	41.3	41.5	41.7	41.7
Machinery, except electrical	42.6	41.7	42.3	42.0	42.7	42.3	42.4	42.2	42.3	42.0
Electrical and electronic equipment	41.0	40.7	41.1	41.1	41.0	40.7	40.6	40.9	41.1	41.0
Transportation equipment	43.1	41.8	42.8	41.6	43.1	42.5	42.6	42.7	42.8	41.5
Motor vehicles and equipment	44.0	41.6	43.4	43.4	43.9	42.7	42.6	43.0	43.4	43.3
Instruments and related products	41.7	40.8	41.0	41.1	41.8	41.3	41.4	41.1	41.0	41.1
Miscellaneous manufacturing	39.6	39.2	39.1	39.4	39.1	39.4	39.3	39.4	39.0	39.0
Nondurable goods	40.3	40.3	40.6	40.3	40.2	40.3	40.2	40.2	40.3	40.1
Overtime hours	3.9	3.8	4.1	3.9	3.7	3.6	3.8	3.6	3.7	3.7
Food and kindred products	40.7	41.2	41.6	41.1	40.4	40.7	41.0	40.8	41.1	40.8
Tobacco manufactures	41.3	37.3	40.1	40.9	(2)	(2)	(2)	(2)	(2)	(2)
Textile mill products	41.2	41.3	41.1	40.8	41.0	41.4	41.2	41.0	40.7	40.6
Apparel and other textile products	37.1	37.1	37.0	37.1	36.9	37.1	37.0	37.0	37.0	36.9
Paper and allied products	43.3	43.2	43.7	43.4	43.2	43.3	43.2	43.5	43.2	43.3
Printing and publishing	38.1	37.8	38.3	37.7	38.0	37.8	37.6	37.7	37.9	37.6
Chemicals and allied products	42.3	42.1	42.5	42.1	42.5	42.5	42.5	42.4	42.5	42.2
Petroleum and coal products	44.7	43.7	44.5	44.2	(2)	(2)	(2)	(2)	(2)	(2)
Rubber and misc. plastics products	41.7	41.2	41.6	41.6	41.6	41.5	41.4	41.5	41.6	41.5
Leather and leather products	37.9	38.4	38.2	37.9	37.8	37.9	37.7	38.1	38.2	37.7
Transportation and public utilities	39.5	39.4	39.5	39.8	39.4	39.4	39.4	39.0	39.4	39.7
Wholesale trade	38.2	38.1	38.1	38.4	38.1	38.0	38.1	38.0	38.1	38.2
Retail trade	29.1	29.6	28.9	28.9	29.2	28.9	29.2	28.8	28.8	29.0
Finance, insurance, and real estate	36.0	35.8	35.7	36.2	(2)	(2)	(2)	(2)	(2)	(2)
Services	32.7	32.9	32.6	32.8	32.7	32.5	32.8	32.6	32.7	32.8

1/ Data relate to production workers in mining and manufacturing; construction workers in construction; and nonsupervisory workers in transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for approximately four-fifths of the total employees on private nonagricultural payrolls.

2/ These series are not published seasonally adjusted since the seasonal component is small relative to the trend-cycle and/or irregular components and consequently cannot be separated with sufficent precision.

p = preliminary.

Table B-3. Average hourly and weekly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

Industry	Average hourly earnings				Average weekly earnings			
	Oct. 1988	Aug. 1989	Sept. 1989p/	Oct. 1989p/	Oct. 1988	Aug. 1989	Sept. 1989p/	Oct. 1989p/
Total private	$9.45	$9.61	$9.77	$9.83	$329.81	$335.39	$340.00	$343.07
Seasonally adjusted	9.43	9.69	9.74	9.81	328.16	335.27	337.98	341.39
Mining	12.79	13.11	13.17	13.14	544.85	566.35	578.16	586.04
Construction	13.17	13.33	13.47	13.51	514.95	519.87	519.94	529.59
Manufacturing	10.25	10.44	10.55	10.54	423.33	425.95	434.66	432.14
Durable goods	10.79	10.98	11.10	11.08	453.18	453.47	462.87	459.82
Lumber and wood products	8.77	8.93	8.97	9.00	359.57	360.77	362.39	365.40
Furniture and fixtures	8.06	8.29	8.40	8.39	323.21	329.94	336.84	336.44
Stone, clay, and glass products	10.57	10.77	10.79	10.84	454.51	460.96	459.65	463.95
Primary metal industries	12.19	12.36	12.45	12.50	531.48	525.30	534.11	532.50
Blast furnaces and basic steel products	14.03	14.27	14.36	14.50	615.92	613.61	618.92	622.05
Fabricated metal products	10.34	10.50	10.64	10.59	434.28	432.60	444.75	442.66
Machinery, except electrical	11.11	11.32	11.41	11.44	473.29	472.04	482.64	480.48
Electrical and electronic equipment	10.16	10.40	10.48	10.47	416.56	423.28	430.73	430.32
Transportation equipment	13.45	13.70	13.89	13.86	579.75	572.66	594.49	576.58
Motor vehicles and equipment	14.09	14.18	14.48	14.48	619.96	589.89	628.43	628.43
Instruments and related products	10.08	10.29	10.31	10.35	428.34	419.83	422.71	425.39
Miscellaneous manufacturing	8.10	8.20	8.39	8.42	320.76	321.44	328.05	331.75
Nondurable goods	9.49	9.71	9.80	9.88	382.45	391.31	397.88	394.94
Food and kindred products	9.03	9.28	9.31	9.28	367.52	382.34	387.30	381.41
Tobacco manufactures	14.01	15.72	14.76	15.33	578.61	586.36	591.88	627.00
Textile mill products	7.45	7.69	7.76	7.77	306.94	317.60	318.94	317.02
Apparel and other textile products	6.22	6.32	6.41	6.40	230.76	234.47	237.17	237.44
Paper and allied products	11.68	11.90	11.99	11.93	505.74	514.08	523.96	517.76
Printing and publishing	10.68	10.89	11.05	11.06	406.91	411.64	423.22	416.96
Chemicals and allied products	12.78	13.08	13.18	13.21	540.59	550.67	560.15	556.14
Petroleum and coal products	15.14	15.23	15.50	15.69	676.76	665.55	689.75	693.50
Rubber and misc. plastics products	9.23	9.44	9.48	9.47	384.89	388.93	394.37	393.95
Leather and leather products	6.33	6.53	6.60	6.62	239.91	250.75	252.12	250.90
Transportation and public utilities	12.42	12.56	12.69	12.77	490.59	494.86	501.26	508.25
Wholesale trade	10.10	10.35	10.46	10.52	385.82	394.34	398.53	403.97
Retail trade	6.39	6.50	6.61	6.63	185.95	192.40	191.03	191.61
Finance, insurance, and real estate	9.29	9.50	9.62	9.77	334.44	340.10	343.43	353.67
Services	9.09	9.29	9.49	9.60	297.24	305.64	309.37	314.88

1/ See footnote 1, table B-2.

p = preliminary.

Table B-4. Average hourly earnings of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry, seasonally adjusted

Industry	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989p/	Oct. 1989p/	Percent change from: Sept. 1989-Oct. 1989
Total private2/:							
Current dollars	$9.43	$9.62	$9.69	$9.69	$9.74	$9.81	0.7
Constant (1977) dollars3/	4.84	4.77	4.79	4.79	4.81	N.A.	(4)
Construction	13.08	13.32	13.42	13.37	13.38	$13.43	.4
Manufacturing	10.29	10.45	10.48	10.52	10.55	10.57	.2
Excluding overtime5/	9.80	9.99	10.01	10.05	10.08	10.10	.2
Transportation and public utilities	12.41	12.54	12.61	12.57	12.66	12.76	.8
Wholesale trade	10.14	10.33	10.44	10.39	10.46	10.56	1.0
Retail trade	6.38	6.52	6.54	6.57	6.58	6.62	.6
Finance, insurance, and real estate	9.35	9.53	9.68	9.57	9.66	9.83	1.8
Services	9.07	9.34	9.46	9.43	9.49	9.59	1.1

1/ See footnote 1, table B-2.

2/ Includes mining, not shown separately, because its seasonal component is too small to be separated out with sufficient precision.

3/ The Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) is used to deflate this series.

4/ Change was 0.4 percent from August 1989 to September 1989, the latest month available.

5/ Derived by assuming that overtime hours are paid at the rate of time and one-half.

N.A. = not available.

p/ = preliminary.

Table B-5. Indexes of aggregate weekly hours of production or nonsupervisory workers1/ on private nonagricultural payrolls by industry

(1977=100)

Industry	Not seasonally adjusted				Seasonally adjusted					
	Oct. 1988	Aug. 1989	Sept. 1989p/	Oct. 1989p/	Oct. 1988	June 1989	July 1989	Aug. 1989	Sept. 1989p/	Oct. 1989p/
Total private	127.7	131.1	130.2	130.8	126.3	128.1	129.2	128.5	128.8	129.4
Goods-producing industries	105.2	105.6	106.0	105.5	102.4	102.3	103.0	103.3	102.9	102.5
Mining	83.1	86.0	87.3	88.9	81.2	81.2	80.3	84.4	85.7	86.9
Construction	151.4	158.4	154.6	156.4	139.4	139.3	142.7	143.5	143.1	143.8
Manufacturing	97.3	96.4	97.4	96.4	96.2	96.4	96.3	96.4	95.9	95.3
Durable goods	95.4	92.9	94.2	93.3	94.6	94.0	93.8	94.0	93.3	92.4
Lumber and wood products	108.5	107.7	106.7	106.1	106.3	103.4	102.6	103.6	103.2	104.2
Furniture and fixtures	115.5	111.9	113.6	113.6	112.3	112.6	113.2	111.9	111.9	110.8
Stone, clay, and glass products	93.1	93.1	91.8	91.9	90.6	89.8	90.0	90.2	88.8	89.4
Primary metal industries	68.7	66.6	67.1	66.0	68.9	68.5	67.9	67.6	66.5	66.3
Blast furnaces and basic steel products	53.3	52.3	51.8	51.2	54.1	52.6	52.0	53.0	51.9	52.3
Fabricated metal products	92.9	89.2	91.2	91.0	91.8	90.8	90.7	90.4	90.3	90.0
Machinery, except electrical	91.4	91.3	92.9	92.0	91.9	93.8	94.0	93.2	93.1	92.1
Electrical and electronic equipment	101.7	97.3	98.5	98.3	101.0	97.8	97.6	98.0	97.9	97.4
Transportation equipment	101.0	95.5	98.9	94.9	100.8	99.5	98.6	100.5	98.4	94.6
Motor vehicles and equipment	92.7	83.7	88.0	83.7	92.7	88.1	85.7	90.1	87.2	85.1
Instruments and related products	114.3	115.1	115.6	116.2	114.8	116.1	116.9	115.8	115.8	116.3
Miscellaneous manufacturing	87.6	87.2	87.4	88.6	84.0	86.2	85.7	86.8	85.3	85.3
Nondurable goods	100.0	101.5	102.2	101.0	98.6	99.9	100.1	99.9	99.8	99.5
Food and kindred products	106.2	113.0	114.9	110.7	101.7	104.3	106.4	105.2	106.7	106.1
Tobacco manufactures	84.4	66.6	75.5	77.0	73.1	69.0	70.5	68.7	68.7	68.9
Textile mill products	81.3	81.4	80.6	80.3	80.6	81.5	81.3	80.4	79.4	79.6
Apparel and other textile products	85.0	85.1	84.8	85.0	83.8	85.2	84.9	84.9	84.3	83.7
Paper and allied products	102.3	103.1	103.9	103.5	101.9	102.3	102.7	103.4	102.3	102.9
Printing and publishing	137.4	137.9	139.4	138.0	137.3	138.3	137.7	138.3	138.7	137.7
Chemicals and allied products	98.7	101.8	102.1	100.6	99.5	101.8	101.5	101.8	101.5	101.3
Petroleum and coal products	85.5	85.3	86.7	86.0	84.1	84.3	83.2	83.4	84.3	83.9
Rubber and misc. plastics products	118.9	117.4	118.8	119.1	118.5	118.9	118.8	119.3	118.8	118.7
Leather and leather products	56.5	56.4	55.6	54.9	55.3	55.5	54.7	54.8	54.5	55.8
Service-producing industries	140.1	145.2	143.6	144.9	139.6	142.2	143.7	142.4	143.2	144.2
Transportation and public utilities	116.0	114.9	118.3	119.8	114.6	117.3	117.7	115.7	117.0	118.6
Wholesale trade	125.2	128.3	128.1	129.3	124.2	126.7	127.2	127.3	127.5	128.2
Retail trade	126.6	131.9	128.3	128.5	126.5	127.4	128.9	127.5	127.3	128.2
Finance, insurance, and real estate	141.2	145.8	143.4	145.1	141.6	142.7	145.0	143.3	143.7	145.4
Services	165.1	173.0	171.0	173.0	164.3	169.0	170.8	170.4	171.1	172.2

1/ See footnote 1, table B-2.

p = preliminary.

Table B-6. Diffusion indexes of employment change, seasonally adjusted

(Percent)

Time span	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
	Private nonagricultural payrolls, 349 industries1/											
Over 1-month span:												
1987	55.6	59.3	61.0	61.9	58.6	59.7	65.3	60.6	63.0	67.8	64.5	60.7
1988	60.7	63.5	63.0	62.8	61.3	67.2	63.6	58.0	55.4	63.9	68.2	64.6
1989	68.3	60.5	61.0	58.2	55.6	59.7	55.6	57.4	p/47.4	p/58.2		
Over 3-month span:												
1987	60.7	62.0	66.6	65.2	65.8	65.9	67.8	71.1	71.2	72.3	70.9	65.9
1988	64.8	65.6	69.5	70.2	71.1	71.9	71.2	64.2	65.3	70.1	73.4	74.6
1989	71.6	70.1	64.5	61.9	61.6	60.7	61.6	p/53.0	p/55.0			
Over 6-month span:												
1987	67.3	65.8	64.8	66.8	67.6	69.5	71.3	73.5	73.2	71.5	71.8	72.2
1988	69.9	70.2	71.5	73.9	73.9	69.1	70.2	74.6	73.5	73.9	74.5	75.8
1989	75.1	69.5	68.2	66.0	63.0	p/58.5	p/60.9					
Over 12-month span:												
1987	66.6	68.2	68.2	71.8	71.9	72.5	72.2	74.1	75.4	72.5	73.8	76.9
1988	76.2	76.1	74.8	74.6	75.8	74.9	78.1	75.5	75.5	74.8	74.9	74.1
1989	73.2	73.6	p/69.3	p/67.9								
	Manufacturing payrolls, 141 industries1/											
Over 1-month span:												
1987	44.3	53.9	54.3	55.7	55.3	54.3	62.8	59.9	63.8	59.9	65.6	56.4
1988	58.5	56.0	55.0	59.9	58.5	61.7	59.6	51.1	49.3	62.8	64.9	58.5
1989	62.4	53.5	53.2	49.6	46.8	48.6	49.6	45.4	p/33.3	p/55.3		
Over 3-month span:												
1987	52.1	51.4	59.6	61.3	58.5	62.8	67.0	71.6	68.4	70.6	67.7	64.5
1988	63.1	61.0	62.4	64.9	67.4	67.0	64.5	58.2	62.1	66.7	71.3	70.9
1989	67.4	63.8	55.7	51.8	49.3	48.6	47.9	p/32.6	p/42.2			
Over 6-month span:												
1987	57.4	56.7	55.3	62.4	64.9	67.0	67.4	70.6	71.3	69.5	69.5	68.1
1988	66.3	66.3	67.7	69.5	66.7	64.2	66.0	70.9	68.8	69.9	71.6	74.1
1989	69.5	58.5	55.7	52.8	48.9	p/39.7	p/43.3					
Over 12-month span:												
1987	55.3	58.5	58.5	63.5	66.3	67.4	71.6	72.7	71.6	69.1	68.4	72.3
1988	73.8	70.2	70.9	71.6	72.0	69.9	70.9	69.1	71.6	70.2	69.9	67.0
1989	63.1	63.8	p/56.0	p/54.3								

1/ Based on seasonally adjusted data for 1-, 3-, and 6-month spans and unadjusted data for the 12-month span. Data are centered within the span.
p=preliminary.
NOTE: Figures are the percent of industries with employment increasing plus one- half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing employment.

Representative HAMILTON. All right. Thank you very much, Mrs. Norwood.

The GNP has risen at about a 2.5-percent rate in both the second and the third quarters, and during that time the unemployment rate has fluctuated very little, between 5.2 and 5.3 percent.

Does that mean that 2.5 percent growth is just enough to keep unemployment from rising? Can we draw that conclusion, do you think?

Mrs. NORWOOD. Well, I think we can say that it has been enough, and the reason for that really is the slower growth of the labor force. We are also anticipating in our newest set of projections to the year 2000 that the labor force will continue between now and then to grow more slowly than it has in the past. That's a very important part of this whole equation because if the labor force grows more slowly, it much easier to maintain a stable rate of unemployment.

Representative HAMILTON. Suppose you had a 2½-percent growth ahead of us and that growth remains at that level for a while. Would you expect any further reduction in the unemployment rate, if growth stayed at that level?

Mrs. NOROOD. Of course there are a whole lot of other issues that need to be looked at, but clearly it would appear that you would need that kind of growth in order to maintain some stability given the labor market factors that we know about.

Representative HAMILTON. All right. You mentioned a moment ago your long-term labor force projections. I want to ask a few questions about that. What is your overview of the projections of the number of jobs that will be created and the kinds of jobs and so forth? Can you give us a summary of your findings?

Mrs. NORWOOD. Yes. Basically the projections suggest, first, a very much slower rate of labor force growth over the next decade and some shift in the characteristics of the people who are going to make up the labor force. A larger proportion of blacks and an even larger proportion of Hispanics will be moving into the work force. We expect to continue to see large numbers of women moving into the labor force.

In addition, we think that there will be continued strong growth in the service-producing sector, particularly in industries like health services and business services, which have been growing rapidly over the last few years.

Representative HAMILTON. Now these projections are pretty good, aren't they? They are based on demographics. Do you have a high sense of reliability in these statistics?

Mrs. NORWOOD. Mr. Chairman, no set of projections can be looked at as certainty. What we can tell you is there are certain parts of these projections that are based on developments that have already happened, like birth rates and some of the population shifts.

The most difficult to predict are developments like future productivity trends and some of the estimates of individual industry change.

We develop projections every 2 years, and then after a period of time has passed and the year that we are projecting to has been completed, we go back and take a look at the projections. So, we are evaluating them all the time, and we've found that we have done a reasonably good job, particularly in the general trends.

Representative **Hamilton**. All right. One of the comments made about these new labor force projections in one of your publications points out that many of the occupations that are projected to be the most rapidly growing occupations are those that require post-secondary education and training, and in many of those occupations minorities are not currently very well represented.

Are there going to be jobs available for people in the year 2000 that have low educational qualifications?

Mrs. **Norwood**. There will certainly be some. We are projecting the need still for janitors and truck drivers and messengers and jobs of that sort.

Representative **Hamilton**. Is there going to be more of a squeeze there, do you think because of this?

Mrs. **Norwood**. Yes, I believe there will be greater competition. It's quite clear that the tilt in occupational mix of the future is going to exacerbate the distance between the top and the bottom of the income scale. We have people who have not had much education, who grow up in poverty, who don't have the opportunities that others have, and they are going to be faced with an economy that more and more is going to be requiring technical and professional training which it has been difficult for them to get.

Representative **Hamilton**. Are there going to be enough well trained people to fill the jobs that will become available?

Mrs. **Norwood**. We would hope so.

Representative **Hamilton**. Do your statistics tell you anything about that?

Mrs. **Norwood**. We think that that is one of the areas that this country needs to pay attention to. If there are any shortages, the question will be not so much whether there will be enough individuals to fill jobs, but rather whether there will be a mismatch between the qualifications of the workers who are available and the requirements of the jobs that are created.

Representative **Hamilton**. Now on your projections you use quite conservative assumptions, do you not, for your labor force projections?

Mrs. **Norwood**. We always make three estimates.

Representative **Hamilton**. You have three scenarios?

Mrs. **Norwood**. We have three estimates, yes, three scenarios.

Representative **Hamilton**. You assume a 5.5-percent unemployment rate and only 1 percent annual improvement in productivity.

Mrs. **Norwood**. That's in only one scenario.

Representative **Hamilton**. How do you characterize the scenarios—optimistic, pessimistic—or how do you label them? Or do you just label them one, two, and three?

Mrs. **Norwood**. We characterize them as low growth, middle growth, and high growth, and we can't tell you which one is going to occur. In fact, what usually happens is a combination of some of the elements within them, but there is quite a spread on productivity and there is quite a spread on some of the other elements of industry growth.

Representative **Hamilton**. Now, of course, from our standpoint what stands out is that your assumptions are different from the fiscal year 1990 budget assumptions.

Mrs. **Norwood**. Well, they are not terribly different. First of all, we're projecting to the year 2000. That's one thing that we need to be very careful about. The long-term projections that we have seen from the other parts of the Federal Government appear to fit within the range that we have developed. So I don't think there are any real differences. It's a question of where we're going to fall within this range from the low growth to the high growth.

Representative **Hamilton**. Let me just point out that your projection assumes that the unemployment rate will be 5.5 percent through the year 2000 and that productivity growth will be about 1 percent a year. That's one of your projections.

Mrs. **Norwood**. It's only one projection.

Representative **Hamilton**. I understand. Is that the low, the middle, or the high?

Mrs. **Norwood**. Well, I'm not sure that I have that here.

Representative **Hamilton**. I'm told that's your middle one.

Mrs. **Norwood**. I think it's the middle one.

Representative **Hamilton**. OK. That's the one we were looking at. Now that contrasts with the 1990 budget, which assumes 5 percent unemployment by 1994, and almost double your productivity, 1.9 percent.

Mrs. **Norwood**. Yes, but, for example, the productivity assumption in that forecast is really at our higher growth within this range.

Representative **Hamilton**. When you make these assumptions do you clear this with the OMB, or is this strictly your own and it's not cleared with the OMB?

Mrs. **Norwood**. No, it's not cleared. You know, nobody can be certain about the assumptions that are made in any case, but we see no conflict between the Council of Economic Advisers' estimates and ours because they fall within this range.

Representative **Hamilton**. Within the range of the three?

Mrs. **Norwood**. Yes, very definitely.

Representative **Hamilton**. Now, you also assume that the trade deficit will reach a balance in real terms in the middle of the 1990's, right?

Mrs. **Norwood**. Yes, that is here.

Representative **Hamilton**. What effect does that assumption have on your projections about new jobs?

Mrs. **Norwood**. It has an important effect certainly. As I recall, in one of the estimates we do have a difference, a less rosy picture for international trade and, therefore, we don't have as much employment.

Representative **Hamilton**. Now, if you had a higher trade deficit, does that impact your finding that most new jobs will require a postsecondary education?

Mrs. **Norwood**. I don't think so. What it affects primarily would be the estimates of manufacturing output. The growth of professional, technical, managerial, and administrative jobs tends to be in the service-producing sector, and we would expect that services would continue to grow.

Obviously the growth of the overall economy is going to affect every sector, but I don't think that there is very much difference in terms of what the kinds of educational needs are that we will have.

I believe that our projections are valuable in that we are able to link the occupational demand to the other kinds of economic projections. There are a lot of people, a whole industry of people who make economic projections, and we don't have any expertise that makes us see the crystal ball better than others do.

Representative **Hamilton**. In any event, a principal conclusion that emerges from your projections is that this country is going to have a major task in front of it to upgrade the skills of its work force?

Mrs. **Norwood**. That's right.

Representative **Hamilton**. That's very clear on the basis of your projections; is that fair?

Mrs. **Norwood**. That's right, and I think that is the major importance of our projections, that if we don't face that fact, we're going to exacerbate the problems we have at the low end of the income scale, and we're going to have an increasing mismatch between the jobs and the qualifications of the people.

Representative **Hamilton**. Now, let's go to inflation. Has there been a genuine reduction in inflation in recent months or is the decline that has occurred due primarily to special factors, one-time factors?

Mrs. **Norwood**. We had a fairly large runup in inflation earlier in the year, and that was due to special factors, in particular oil. We have had a little bit of moderation in the rate of inflation in more recent months, and that, too, is due to some of the turn around in oil and some of the other factors.

So there is always something in the consumer price area which goes up. One of the major movers of the rate of inflation since the early 1970's really or the mid-1970's has been oil prices.

Representative **Hamilton**. The consumer price index has risen at an annual rate of just under 2 percent in the last 4 months, and that's about half the rate prices rose in 1988. We ought to take some encouragement from that, shouldn't we?

Mrs. **Norwood**. Yes.

Representative **Hamilton**. The producer price index rose nine-tenths of a percent in September after it declined for 3 months. Food prices fell in September, but prices for other goods rose with energy showing the largest increase. Does the large September increase in the producer price index suggest that this low inflation that we've had for the past 4 months is coming to an end?

Mrs. **Norwood**. I don't think so. I'm not sure I would characterize this as low inflation. I think it is a moderation of inflation, but I would like to have Mr. Dalton give you his wisdom on that.

Mr. **Dalton**. Half of the September increase of nine-tenths of a percent came from an increase in automobile prices, which was the result of changes in seasonal patterns. Auto producers lowered their yearend prices earlier than usual this year. So we had a drop in automobile prices in July that ordinarily would show up in September, and when it didn't show up in September, the index rose rather sharply. So, the two factors were energy and automobiles.

Representative **Hamilton**. So how do you answer the question, has there been a genuine reduction in inflation in the last few months?

Mr. **Dalton**. Well, if you look at both indexes apart from the food and energy component, they are increasing through the first 9 months of this year at slower rates than they did last year.

Representative **Hamilton**. Significantly slower?

Mr. **Dalton**. By about a percentage point in the CPI case.

Representative **Hamilton**. Now wholesale prices rose 6.5 percent in September. Is that going to affect the consumer price index in the next few months?

Mr. **Dalton**. Excuse me.

Representative **Hamilton**. Wholesale energy prices jumped 6.5 percent in September.

Mr. **Dalton**. I would expect that to show up in the CPI in October. I was a little surprised it didn't show up in September, in fact.

Mrs. **Norwood**. However, it's quite clear that these linkages are not always very direct. Food seems to go through much more rapidly than other components of the index.

Representative **Hamilton**. How about the employment cost index, what does that tell us here about the cost of labor?

Mrs. **Norwood**. It's telling us that we're seeing a little bit more increase in the cost to employers of hiring workers and a greater increase for the service-producing workers than for goods producing, as you would expect.

It's also telling us that the benefits cost to employers as distinct from the wages and salaries are going up faster, and the largest component there is health insurance costs to employers, which rose over the last year by 13.7 percent.

Representative **Hamilton**. So most of the real wage growth is occurring in fringe benefits then, such as health insurance?

Mrs. **Norwood**. Yes, a lot of it is. There has been some increase in wages and salaries, mostly in State and local government.

Representative **Hamilton**. Why does the medical cost index rise so rapidly? What are the driving forces there?

Mrs. **Norwood**. Health care costs are going up. The CPI health care component is the one that always stands out as going up faster, and that's, of course, just the out-of-pocket expenses.

Representative **Hamilton**. Why is it going up faster? Do you get into that in your analysis?

Mrs. **Norwood**. I think there are a number of reasons. One is that we are a very litigious society and there are a lot of costs associated with malpractice suits. Another is that partly the result of that, but partly just for good medical practice, we are a country in which we value the use of new technology in medical care and those costs are going up.

It has been suggested that patients who are using hospitals appear to be sicker than they were, and the others are being treated out of the hospital often, and that hospitals are incurring larger costs for special care. People are living longer and older people tend to have higher health care costs than younger people.

Representative **Hamilton**. Some of that increase represents an increase in the quality of service I presume, doesn't it?

Mrs. **Norwood**. Yes, I think so. That's one of our data problems. We would like to improve our ability to factor out those differences in quality, but it's extraordinarily difficult. We really don't have a very good system of price statistics on health care, which is one of my major concerns.

Representative **Hamilton**. Employment in manufacturing has declined about 110,000 since June. There has also been a slight increase in the trade deficit. Has the decline in manufacturing employment been trade related, or are there other explanations?

Mrs. **Norwood**. I think a sizable proportion of it is trade related. Some of it is also defense related. There has been a reduction in defense purchases.

Representative **Hamilton**. All right. Now you've had a decline in the factory workweek in October. Is that across the board or concentrated in a few industries?

Mrs. **Norwood**. The decline in the factory workweek is primarily due to the fact that workers at one of the big aircraft industries went on strike. They went out during the survey week, which means that their hours during that week were reduced. So it's not a significant factor in economic terms.

Representative **Hamilton**. That's the Boeing plant?

Mrs. **Norwood**. Yes, it's the Boeing plant.

Representative **Hamilton**. Have we had a large increase in local government employment this fall?

Mrs. **Norwood**. Yes, we have.

Representative **Hamilton**. Why?

Mr. **Plewes**. It has been primarily in education. Just since August we've gained in local government about 120,000 jobs, in August alone it rose 45,000. Primarily it's in education. Last month there was an increase in State government education employment, too. Why in education? Well, there are more students this year than there were last year and more young people coming into the school system. We also see the increase in expenditures for education that are going on around the country resulting in more employees, small class size ratios and so forth.

Representative **Hamilton**. So a lot of this job growth, 95,000 of this month's 233,000 growth was in government jobs; is that correct?

Mr. **Plewes**. Yes, sir.

Representative **Hamilton**. Does that show a weakness of job growth in the private sector?

Mr. **Plewes**. Yes, that's correct. We've had a slowdown in the private sector.

Representative **Hamilton**. There is a slowdown in the private sector and an increase in the Government sector, is that what it comes down to?

Mrs. **Norwood**. Yes, in State and local government, not the Federal.

Representative **Hamilton**. That's an important point.

All right. Now let's go to this New York Times article. Did you see that article entitled "Accuracy in Short Supply in Flood of U.S. Statistics"?

Mrs. **Norwood**. Yes.

Representative **Hamilton**. What do you think of it?

Mrs. NORWOOD. I think it's written by a very competent journalist and I think it's a reasonably accurate presentation of the situation.

Representative HAMILTON. Do you think that the cuts in staff and data collection referred to there have affected the quality of the BLS data?

Mrs. NORWOOD. The quality of data is affected when you are not able to keep up, as you believe you should, with new developments. We have cut out much of our research activities and much of our special analytical activities which give us a better handle on what is going on. So that's one kind of problem.

A second problem is that we don't have the resources to react to changes in the economy as rapidly as we should. For example, when you have samples in our producer price program that reflect products with a lot of technological change, you should be resampling them very frequently. In the PPI we have something like a 4- or 5-year cycle and sometimes a 6-year cycle. In export and import prices we're in the process of bringing that down to perhaps a 4-year cycle.

I mentioned medical care before. We have a few people working on an output price index for hospitals, and we have people working on productivity measures for hospitals, but we don't have the resources to do that in the way in which it ought to be done.

The service sector is growing very quickly. We still have a whole statistical system that is heavily skewed toward goods producing, and it is not possible to shift the resources. We stil need to know about the auto workers who are laid off and we need to know about the condition of the steel industry. So you can't just say, well, we'll take those resources and put them into other places.

The other thing that troubles me is that it frequently takes investment in things like new technology and new statistical methodology to be able, first, to keep up with the state of the art, but, second, to save money later down the road.

If you use computer-assisted data collection, for example, either by private visit or by telephone, you can probably improve data quality and possibly save money later on, but it does mean an investment and it means testing, and that takes time and it takes resources.

We are in the process of beginning the redesign of the current population survey, and that really must go on. There have been questions relating to it because that budget is split between us and the Census Bureau.

Representative HAMILTON. Now what happens if we hit sequestration and that becomes permanent? What is the impact of that on you? Have you figured that out yet?

Mrs. NORWOOD. I can't tell you in specific detail because we haven't delved into that, but I can tell you that what we will be doing. We will be going through program by progam and cutting samples, eliminating households from surveys, eliminating business establishments from our other surveys, and we will be elongating the sample periods.

When you think about the fact, and I just saw the other day a letter from the Commissioner of Social Security indicating that the cost-of-living adjustment this year for Social Security recipients is costing the Federal Government in calendar 1990 alone $11.5 billion, and what we're talking about is sharply cutting the quality of the underlying data by reducing the budget for the CPI. The entire price program, not just the CPI, costs only about $70 million. Too much government expenditure and too much government revenue depends on that data to risk reducing its quality to save a comparatively small sum.

In fiscal 1982 we took the position that we would cut whole programs and not cut quality. Se we did that and we're still getting complaints about it, but we did it. We don't have anything more to cut out. What we have now are programs that are required by law or are a part of the basic system of core statistics. So it doesn't look good.

Representative HAMILTON. So sequestration, if it continues, would clearly affect the quality of your statistical gathering.

Mrs. NORWOOD. There is no doubt about that.

Representative HAMILTON. The article, of course, said that some revisions of the Consumer Price Index have been delayed for several years because of budget reasons. Is that correct?

Mrs. NORWOOD. That was some time ago.

Representative HAMILTON. Has that affected the quality of our data on inflation?

Mrs. NORWOOD. It did earlier. I think the CPI right now is in very good shape, but I would be very unhappy to see its samples cut, and if we have sequestration we will have to cut them.

Representative HAMILTON. Are you having to cancel or postpone improvements in BLS statistics that you would like to see made because of budget constraints?

Mrs. NORWOOD. Yes.

Representative HAMILTON. A lot of them?

Mrs. NORWOOD. A considerable number of them, and let me give you an example using the material that we are presenting to you today. The business survey is one of our most important surveys. It's a Federal-State cooperative survey.

We have been working on modernizing it and improving its quality. The most important statistic is this first estimate which we report to you at these hearings. We want to minimize revision to be sure that the initial estimate is as good as possible. We found that by using a combination of computer-assisted telephone collection, touch-tone data entry and we're experimenting now with voice recognition, that we can increase the proportion of establishments that report by first closing from about 50 or 55 percent to almost 90 percent. That's a tremendous improvement in quality and may later on down the road mean that we can cut out some of the processing and therefore save money. We have introduced this process in 15 States. To expand it to 50 States, which is what we should be doing, will take money, and we don't have it. That's just one example.

Representative HAMILTON. We read from time to time about revisions in statistical information. I guess as additional information becomes available to you, you revise estimates with respect to GNP and so forth. Is that involved here? I mean is one of the reasons that we get these revisions because we're not doing the things we ought to be doing with respect to statistical gathering?

Mrs. Norwood. I believe that that's an important element. I should tell you that BLS does not have a lot of those revisions. The one series that we have in which we put out a preliminary estimate is this industry employment statistics program.

We have had some revisions, more than we would like in the last few months, but nevertheless, we've done reasonably well with those.

Representative **Hamilton.** You had some revisions on payroll employment, didn't you?

Mrs. Norwood. Yes. This payroll survey is what I was referring to in terms of the technology, which could do a lot to minimize those revisions. There are other statistical series that are done by other government agencies where revisions are more of a problem.

Representative **Hamilton.** Now the Chairman of the Council of Economic Advisers, Mr. Boskin, announced an administration initiative to improve the quality of U.S. statistics, and I think you're on the task force that is working on that now.

Mrs. Norwood. Yes.

Representative **Hamilton.** Can you give us a progress report on that initiative?

Mrs. Norwood. Yes, I can. The working group reviewed the situation in each of the major agencies. They focused entirely on economic statistics. That is, they didn't look at areas such as safety and health statistics which are not directly relevant to economic policymaking.

The working group did a review in a very careful way. They asked agencies to indicate where the strengths were and where the weaknesses were, the errors that the agencies saw and so on. They have put all that material together and they plan to establish priorities for improving data. They will be discussing this at higher levels, and I believe that, oh, within the next few months Mr. Boskin will be making some public statement on the conclusions.

Representative **Hamilton.** Is there a target date for the release of a report?

Mrs. Norwood. I don't think a date has been set, but I would expect it would be within the next couple of months.

Representative **Hamilton.** Is it your view that the initiative will result in an improvement in the quality of U.S. statistics?

Mrs. Norwood. Well, I hope so. I'm waiting to see, however.

Representative **Hamilton.** The article also said: "A changing attitude about government and the restraint on pay has caused a decline in the quality of people attracted to the statistical agencies." Is that correct?

Mrs. Norwood. I think I would phrase that a little differently. I would say that it is increasingly difficult to get people to come work for the Federal statistical agencies.

Representative **Hamilton.** Because of the pay?

Mrs. Norwood. Because of the pay. We can't even compete with universities, any more. We're at least $10,000 or $15,000 below the level of a university for a young Ph.D. we have found.

What we are able to do occasionally is to attract very good people who come to BLS because they are interested in what we're doing and they know they can have access to a wide variety of data.

Representative **Hamilton**. How many professionals do you hire at BLS?

Mrs. **Norwood**. Oh, we must have perhaps a thousand or more, something like that. We have about 2,700 people. Actually most of our people are professionals. So it's probably closer to 2,000, something like that. But what's happening is that we attract people and they come and they stay a few years and then they leave. They don't make a career of government. We do have some very good young people, bright young people, but it's a revolving door. It makes it very difficult, and I think it affects the quality of what we do.

The other thing is that there is a tremendous cost to this turnover. We are spending an enormous amount of our time on this. Even our professional staff is spending a lot of time going out and trying to recruit new staff.

Representative **Hamilton**. Are you finding in the private sector, in the business community and among economists, professional economists in the private sector and in other areas, a rising concern about the quality of our statistics?

Mrs. **Norwood**. I think there is some, yes, depending upon the particular series. There is a real frustration out there with a lack of adequate coverage of the service producing sector. I would say that that's probably their largest concern. There is a very real concern about medical care costs and health care costs containment and the fact that we don't have very good data on health care prices in particular.

There is a lot of concern about productivity in general in the country, and of course a large part of the problem that we have in developing productivity measures is that we need good measures of output. So there is a focus on what can we do to increase those.

Representative **Hamilton**. The conclusions of this article are stark, and I want to see if you agree with the lead paragraph: "The government system of gathering economic statistics is badly in disrepair." Do you agree with that?

Mrs. **Norwood**. I would not characterize the situation at BLS that way, but we have fared a little better than some of the others. I would prefer to state it in a little different way and say that we are not now able to do many of the things that we need to do to see to it that we don't find 2 or 3 years from now that the system has gone down under.

Representative **Hamilton**. That's much more diplomatic. [Laughter.]

The second paragraph says: "Statisticians and economists, both in and out of government, say that a combination of budget cuts and deregulation is eroding important yardsticks and undermining policymakers striving to guide the economy."

Mrs. **Norwood**. I think that is why Michael Boskin decided to set up a working group.

Representative **Hamilton**. Thank you very much.

Mrs. **Norwood**. Thank you.

Representative **Hamilton**. We stand adjourned.

[Whereupon, at 10:15 a.m., the committee adjourned, subject to the call of the Chair.]

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